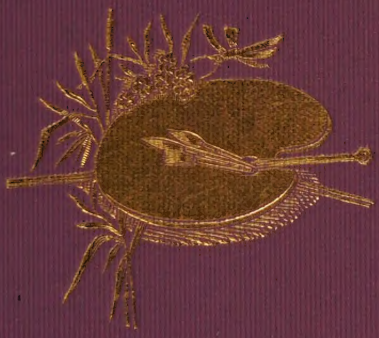
China Painting

McLaughlin



To Lola

from

Ralph Wyman.

Xmas '11.

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CHINA PAINTING.

A Practical Manual

For the Use of Amateurs in the Decoration of Hard Porcelain

By

M. LOUISE McLAUGHLIN.

NEW EDITION.
TWENTY-FIRST THOUSAND.

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"Success depends on knowing how to be patient, how to endure drudgery, how to unmake and remake, how to recommence and continue without allowing the tide of anger or the flight of the imagination to arrest or divert the daily effort.

H. TAINE.

The art of painting on china is certainly a beautiful one, and is, perhaps, peculiarly fitted to be an agreeable pastime for persons of leisure. There is, however, too general a tendency to consider it simply in the light of an amusement, unworthy of serious study, and an art for the practice of which no special training or knowledge is necessary.

Now, what is worth doing at all is worth doing well, and the idea that one can successfully practice any branch of art without having previously learned to draw is false. The eye and hand must be trained, and the taste cultivated, before any result worthy of the name can be achieved.

The best foundation for any art-work is a

thorough knowledge of drawing; and the time spent in acquiring such knowledge will never be regretted. It is true that there are methods of decorating china with simple designs, which may be accomplished by those unskilled in the use of the pencil or brush; yet, as the hand of the master is revealed in the most careless sketch, so the want of skill or freedom of touch is apparent in the treatment of the simplest subject.

To those who have the time and patience, as well as the natural ability to learn to draw, we would say: Make it your first business to acquire that knowledge. Cultivate your taste by study of the best models; educate the eye to perceive beautiful forms in nature or art, and the hand to transcribe them.

Painting on china, may not offer the same facilities for the truthful rendering of nature as oil or water-color painting, but it has other compensating advantages in the beauty of the enamel, and the enduring qualities of the pigments, when fixed by the fire.

With the present greatly increased facilities

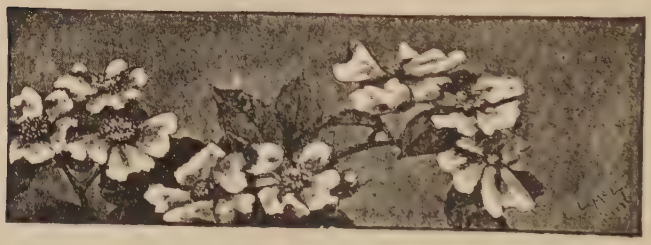
afforded by the improvements in the manufac ture of colors, china painting should regain something of its former prestige among the arts In other times the greatest artists exercised their art upon this material, which, seemingly so frail, has preserved their work unharmed for ages.

A revival of the art, however, can not be expected from a servile copying of the old designs and methods. As well might the artists of the modern school have expected to arrive at their present knowledge of *technique* by copying the pictures of Durer or Van Eyck.

There will be no true revival of any branch of art unless founded upon study of nature and the adaptation of her principles to design, and there will likewise be no advance possible to the individual art student without this study and practice.

This study brings with it its own reward in the cultivation of what has been called the artistic sense, which, in the words of Thackeray, reveals "splendors of nature, to vulgar sights invisible, and beauties manifest in forms, colors, shad-

ows of common objects, where most of the world saw only what was dull, and gross, and familiar. One reads in the magic story-books of a charm or a flower which the wizard gives, and which enables the bearer to see the fairies. O enchanting boon of nature, which reveals to the possessor the hidden spirits of beauty round about him—spirits which the strongest and most gifted masters compel into painting or song! To others it is granted but to have fleeting glimpses of that fair art-world, and tempted by ambition, or barred by faint-heartedness, or driven by necessity, to turn away thence to the vulgar life-track and the light of common day."



CHAPTER I.

PREPARING THE DESIGN.

In commencing to paint a design on china, the first thing to be done, of course, is to sketch the outline. The best way to do this is to prepare the china by rubbing the surface with spirits of turpentine, and, after having left it a few moments to dry, draw the design upon it very lightly with a hard lead pencil.

Alcohol may also be used for the same purpose, and has the advantage, that it is not so liable to catch the dust. The surface, however, does not receive the marks of the lead pencil so well as when it is prepared with turpentine. Lithographic crayon may also be used, and without any preparation, but the outline is not so delicate as that drawn with the lead pencil.

If the subject is a difficult one, as for instance, a design containing several figures, time may be

saved and liability to error avoided by tracing the design, which insures the correct relative position of the figures, and tends to produce the object desired, a correct copy of the original. It is better, however, to sketch simpler subjects directly upon the china.

It is commonly supposed that a tracing is of great assistance to any one unskilled in drawing, but if one is unable to draw a correct outline, it is hardly possible that the painting will be better. It is so very easy to lose the outline in working, that, after all, a tracing is but a slight indication, which has, for its principal use, the placing of the design in exactly the right position on the plate or other object to be decorated.

There are various ways of tracing; the simplest and best of which is the following: Lay a piece of transparent paper over the design to be copied, and trace the outlines very carefully with a hard lead pencil, then turn the tracing paper over on any white surface, and go over all the lines on the reverse side with a soft pencil. You

can now lay the tracing, right side up, on the china, which has been previously prepared for the lead pencil with turpentine, and having placed it in exactly the right position, secure it by means of bits of modelling wax or gummed paper at the corners, and pass over the lines with a hard point, or rub the entire surface with a rounded instrument. The handle of the palette knife may be used for this purpose. This will transfer the pencil drawing to the surface of the china.

The more delicate the outline the better, provided it is plainly visible, as a heavy, dark or colored outline sullies the colors used upon it, and causes much annoyance in working. Although it may disappear in the firing, it is better to avoid it. Faulty lines in the tracing may be rectified by the use of a sharpened stick of soft wood moistened with turpentine.

CHAPTER II.

GENERAL DIRECTIONS FOR PAINTING.

These directions are confined to the use of enamel colors on hard porcelain. This material is suitable for every style, and as the painting is done on the glaze, is capable of receiving the highest degree of finish.

A plate or flat plaque is the best subject for a beginner, as it is more easily managed than cups or other articles with rounded surfaces.

As stated before, the colors in tubes are especially to be recommended to the novice.

If the powdered colors are used, however, the powder should be well rubbed down with a little oil of turpentine and thinned with the spirits of turpentine, a saucer of which should be kept on the table while working, and used in the same way that water is used in water-color painting—for diluting the paint and washing the brushes.

If the tube colors are used, it will simply be necessary to dilute them with turpentine. If they are difficult to lay, a drop or so of oil of turpentine may be added to the spirits of turpentine. Care should be taken, however, to avoid an excess of oil, as it renders the colors liable to blister in the fire.

The use of clove oil as a medium is advised by some. The color can perhaps be more easily laid with it than with spirits of turpentine. It does not dry so quickly, however, and unless recourse is had to the process of drying the work with the aid of an alcohol lamp, its use involves tedious waiting. Others recommend oil of lavender. For my own part, I think the use of spirits of turpentine decidedly preferable, as in that case no time need be lost in waiting for the work to dry, and it is possible to finish a painting in one sitting.

The drying of the colors is affected by the state of the atmosphere. Statements, therefore, that are founded on the usage of foreign painters, with reference to this point, are prac

tically of little value here, as the difference in climate changes the conditions under which the work is executed.

If during the progress of the painting it is found to be difficult to work over the colors first laid, which are indeed very liable to come up, the piece of china may be placed in a moderately warm oven, to dry, before proceeding. On being taken out of the oven, the colors will be found to have lost their gloss, if perfectly dry, and perhaps will have changed their hue. No alarm need be felt at this, as they will return to their former brilliancy when fired.

Some china painters disapprove altogether of any rapid method of drying, and only advise that the work be laid aside until dry, others dry it by means of an alcohol lamp. If you use spirits of turpentine as a medium, however, the part first done will, as a general thing, become dry enough to work over while you are engaged on other portions of the design.

A second vessel containing turpentine should be kept on the working table, for the purpose of

washing the brushes, especially when the same one is used for various colors.

After using a color containing iron, the brush should be carefully washed before it is charged with one which does not contain iron, or if white is to be used.

The brushes ought not to be too small, and the colors should, as far as possible, be laid in broad washes, and decided touches placed lightly and quickly and not overworked. The use of the blender may be resorted to if necessary, especially in laying the first washes, although it is better to avoid it afterward if possible.

The same rules may be applied to china painting as to water-colors, to which it bears a close resemblance. The greatest art consists in placing each touch where it should go and leaving it, not spoiling it by uncertainty or degrading the tint by overwork. In fine work, lining and stippling are necessary in finishing, but should not be carried to excess or made too apparent. These latter processes are, perhaps, more indispensable in preparing work for a single firing, as it is very

difficult to lay repeated washes over one another, the under tint comes up so readily, especially when it is not thoroughly dry.

The same place must never be passed over by the brush twice in immediate succession, as the under tint will certainly come up, and the blot caused in the painting will be difficult to rectify. It is of no use to attempt it while it is wet; work on some other part and then go over it, or first dry it in the oven.

Some of the tube colors may require to be rubbed down after being taken from the tubes. This will be especially necessary in the case of the carmines and whites. A horn or ivory palette knife should be used with these colors, as well as with the blues, and all colors containing no iron. Mixtures of colors on the palette may be rubbed down occasionally or mixed with the brush before using, to prevent them from separating themselves into their component parts.

Too much turpentine should not be taken into the brush when it is to be charged with color. Dip it into the turpentine, and, remove

the surplus moisture by drawing the brush over the edge of the vessel containing it, before taking up the color from the palette. The tint may be tried first on the edge of the plate. Surplus color or moisture may be removed by touching the brush upon a muslin rag, which should always be at hand for the purpose of wiping the brushes.

After using, the brushes should be washed in alcohol. The bottle containing it must be kept tightly corked, as it evaporates very quickly when exposed to the air. Care must be taken that no drops of the alcohol fall upon the painting, as it will immediately remove the colors from the surface. When the large brushes are cleaned, after being washed in the alcohol, the hairs should be spread apart, and the fingers passed lightly over them until they are dry; otherwise, the hairs may stick together in drying, and the brush be rendered unfit for use. Washing in alcohol will prevent the turpentine used in painting from injuring the brushes, as it would if allowed to remain in them.

As a general rule, the shadows should be painted a little darker than they are to appear when finished, as they are liable to become lighter in the firing.

Dust floating in the atmosphere is very annoying, as it attaches itself so readily to the painting while in progress. The moist color settles around these particles and forms spots on the work which may not disappear in the firing. This should be avoided as far as possible. If it should happen, however, that any particles fall upon the painting, they may be removed with the point of a needle. This instrument will also be found useful for removing surplus color, when desired.

The tube colors should be preserved from heat as far as possible. If they become dry in the course of time, which should not be before they have been kept a year, at least, the other end of the tube may be opened, and the color taken out with the palette knife, and rubbed down with turpentine. It would be well to change the position

of the tubes lying in the box, occasionally, to prevent the color separating from the oils with which it is mixed. The tops should also be screwed on very tight, as the paint is liable to run out.

CHAPTER III.

COMPOSITION OF PALETTES FOR VARIOUS STYLES OF PAINTING.

In the following pages will be found lists of colors and mixtures to be used for the various subjects which may be painted on china.

I do not wish to be understood as saying that these are the only combinations that can be used, or that they are the best, but simply that in my own experience they have produced the desired results.

Each artist has his own method of making up his palette. The liberty of choice enjoyed in mixing oil or water colors is, however, somewhat abridged in china painting by the chemical changes produced by the action of the fire, which forbids mixtures which would be quite innocent in either of the former mediums.

The following palettes are, however, suggested

for the benefit of those unfamiliar with the use of enamel colors as combinations which may be relied upon to produce the results attributed to them.

I have endeavored to limit the number of colors as far as possible, believing that where one color will produce the desired effect, the mention of half a dozen only confuses the student. The difficulty of indiscriminate mixing, referred to before, renders a greater number of colors necessary in china painting than in oil or water colors. Yet, as in those branches of art, it is better to have a limited palette, and learn its full capacity, than to become involved in the intricacies of one embracing more colors, but producing combinations less likely to harmonize. It is certainly less confusing, and leads to more thorough knowledge, for a beginner to use few colors, and comprehend perfectly how effects are produced.

It will be proper to introduce here a classification of the colors used in china painting, which

will lead to an understanding of the way in which they may be mixed.

M. Lacroix, from whose work the following is adapted, has classified the colors with regard to iron, which plays an important part in the composition of many of them.

First Group. Colors without iron—the whites blues, and the gold colors.

Second Group. Colors containing but little iron—yellows and greens.

Third Group. Colors whose base is iron—the reds, flesh reds, red browns, iron violets, the browns, brown yellows, ochres, blacks, and most of the greys.

In the first class, the colors whose base is gold are the carmines, carmine lake, the purples, and the golden violets.

The foundation of these colors is purple of cassius, which is made of gold and tin. It gives tints which vary from lilac to dark violet. Modified by silver and different fluxes, it produces carmines and purples.

If the carmines are fired at too low a tempera-

ture, the silver predominates and the color takes a dirty yellow tint. If, on the contrary, the temperature is too high, the shade of silver is completely destroyed, and the carmine changes to lilac. This effect does not exist in the purples to the same degree. Carmine will also take a yellowish tint in the firing if applied very thickly.

The blues, with rare exceptions, owe their color to cobalt. As the mixture of cobalt and iron gives tints varying from light grey to black, according to the proportions, it is well to take great precaution when using the blues with the reds, flesh colors, browns, and ochres.

The brushes which have been used with these colors should also be carefully washed before using for a blue of which a pure tint is desired.

Care should be observed in the use of the yellows, some of which cause the colors mixed with them to disappear entirely in the fire. This effect is seen where too much ivory yellow is mixed with red.

Mixing yellow and jonquil yellow do not contain iron, and are preferable, therefore, for mix-

ing with the blues to obtain fresh greens. Other yellows containing iron should, on the contrary, be used with the iron colors.

The color called silver yellow does not contain silver; it is composed of jonquil and orange yellows. It mixes readily with the gold colors, also with iron violet, and sometimes with reds.

Coral color can not be used in painting, on account of its extreme sensibility to the fire, which at a high temperature will sometimes change it to yellow.

Most of the browns owe their tints to the mixture of cobalt and iron. They frequently contain zinc also. The yellow browns and ochres are generally produced by a mixture of iron and zinc.

The best blacks are usually made of cobalt and iron, like the browns, only in the former the cobalt predominates.

All the greys, with the exception of platina grey, are made by mixing colors of the different groups—blacks, blues, and reds, according to the tints required.

Greys may also be obtained in painting by mixing complementary colors—the reds and greens, yellows and violets (those composed of carmine and blue). Grey may also be made by mixing one-third ivory black with two-thirds sky blue. Wherever black is used very thinly to form a grey tint, it should be mixed with a little blue. Black used alone, in thin washes, is sometimes found to rub off after the firing.

Some colors require more heat for their fusion than others. These are called hard colors.

As the flux, joined to the coloring oxide in the manufacture of the colors, lightens the tint, it follows that those containing less flux—viz. the dark colors—are harder than the light colors.

The lighter and more fusible colors, though burning in the same time, are the *bleu ciel clair* (light sky blue); *carmin tendre, A* (soft carmine, A,); the *gris perle* (pearl grey); *gris roux* (reddish grey), and the *jaune d'ivoire* (ivory yellow). These colors should not be applied too thickly, as they will be liable to scale in firing.

If by any means the painting should not have

received sufficient glaze in the firing, the glaze may be restored by applying a light wash of one of the more fusible colors, and firing the piece again. For mixtures of brown or reddish tones a very light wash of fusible grey may be used.

The *blanc fixe* (permanent white) and other opaque compounds are seldom employed in painting on hard porcelain, their use being limited to little touches or spots, for heightening the effect in jewels or embroidery, or for the highest light in white flowers or drapery.

It would be better before beginning to paint with the china colors, to arrange, upon a plate of the kind of china you wish to use, samples of the different colors and mixtures, carefully marked. This, after it has been fired, will be of great assistance for reference in using the colors.

PAINTING IN MONOCHROME.

Painting in this style, *en camaïeu*, as it is called by the French, has a very pleasing effect on china, and, as it is somewhat easier than that in

which various colors are used, may be recommended to the beginner, especially if unfamiliar with the use of oil or water colors.

Paintings *en camaïeu* may be made in almost any color. The easiest to use for this purpose are, probably, *violet de fer* (iron violet) or *brun rouge riche* (deep red brown). Sepia may also be easily employed with good effect.

Monochromes in pink and blue are very pretty; but the colors are rather more difficult to use.

Carmine may be used for pink monochromes. The tint, however, is likely to be affected differently by the fire, where it is laid on thinly or the contrary. It is difficult, in using this color, to have two pieces intended to match fired with the same tint.

Pourpre riche (deep purple) may also be used, with less risk of having the tint altered by the fire

PALETTES FOR FLOWER PAINTING.

Colors Required.

Vert, No. 5, pré—Grass green.
Vert, No. 6, brun—Brown green.
Vert, No. 7, noir—Black green.
Vert pomme—Apple green.
Jaune à mêler—Mixing yellow.
Jaune jonquille—Jonquil yellow.
Jaune orangé—Orange yellow.
Bleu ceil azur—Sky blue.
Bleu riche—Deep blue.
Carmine, No. 3, foncé—Dark carmine.
Pourpre riche—Deep purple.
Violet d'or—Golden violet.
Rouge capucine—Capucine red.
Rouge orangé—Orange red.
Brun rouge riche—Deep red brown.
Rouge chair, No. 2—Flesh red, No. 2.

In laying on the first washes, for a flower, the strokes of the brush should proceed from the

circumference to the center, and for a leaf, from the central vein to the edge. In painting grasses or parallel-veined leaves the stroke should be made from the top to the bottom of the leaf. After the design is prepared, lay in first the local tints of the various parts, so that they may be dry by the time you wish to paint the shadow Do this with flat, broad washes, blending them with a small brush, if necessary. By the time the last of these washes has been placed the part first done will be ready for the shading.

The centers of flowers should be painted directly on the china. Any adjacent colors which may infringe upon the outline must be scraped or wiped off.

On white grounds the painting should be rather light, to avoid a hard effect, and on dark colored grounds, correspondingly dark, to avoid weakness.

FOLIAGE.

For the local tint use *vert*, *No.* 5, *pre* (grass green). Blue may be added if a bluish green is desired, or, if a yellow green, it may be made

by the addition of *jaune à mêler* (mixing yellow) or *jaune jonquille* (jonquil yellow), if a more brilliant tint is desired.

Vert brun (brown green) may be used for the shadows, mixed with grass green, using more of the former as the shadow deepens. A small quantity of dark blue may also be added to darken and subdue the tint.

Vert, No. 7, noir (black green) may be used in some cases for very dark shadows, but should be employed with great care, as it is a color of great intensity.

Carmine and purple may be used with greens, when greyish shadows are required.

Greens may also be shaded with brown. *Brun 4 foncé* (dark brown) may be used also for touches of brown. For red touches on leaves, etc., *violet de fer* (iron violet) may be employed.

FLOWERS.

For white flowers the surface of the china forms the local tint. For the shadows a grey

made of black with the addition of a very small quantity of blue may be used, or any of the other greys previously mentioned. *Gris noir* (black grey) is a bluish grey of great intensity, which must be used with great care, especially in mixtures with reds and yellows.

The highest lights may be touched with *blanc fixé* (permanent white) or *blanc chinois* (Chinese white).

Yellow flowers may be painted with *jaune â méler* (mixing yellow) or *jaune jonquille* (jonquil yellow) and shaded with *vert brun* (brown green). When touched with brownish red, *violet de fer* (iron violet) may be used.

For blue flowers either of the blues may be used according to the tint desired. They may be shaded with the black or *gris noir* (black grey). Some colors, such as that of the common pale blue morning-glory, may require the addition of a little carmine.

Pink flowers may be painted with carmine, and shaded with a grey made of carmine and *vert pomme* (apple green).

Dark crimson may be made with *pourpre riche* (deep purple), shaded with the same.

Dark purple flowers can be painted with *pourpre riche* (deep purple), and *bleu riche* (deep blue), adding more or less of the blue, according as the color desired is more purple or crimson. They should be shaded with the same color. This mixture forms a tint of great intensity. *Violet d'or* (golden violet) may also be used for purple flowers, with the addition of *bleu riche* (deep blue), when desired.

For red flowers there are *rouge capucine* (capucine red), *rouge orangé* (orange red), *brun rouge riche* (deep red brown), or *rouge chair* (flesh red) They may be shaded with the same tint used for the lights, and by the addition of black, brown, or *violet de fer* (iron violet), according to the color desired.

Yellow centers of flowers may be painted with mixing yellow, shaded with brown green, and touched with sepia or heightened with jonquil or orange yellow.

When floral designs are painted from na-

ture, it would, perhaps, be better to make the studies in water-colors. The painting can then be executed on the china with more freedom.

Designs in water-colors are better suited for reproduction on china than when painted in oil colors, as the former method bears a much closer resemblance to china-painting.

The flowers should be arranged in a careless, graceful manner. A design occupying one side of a plate, for instance, and straying over into the border, will be more pleasing than one placed directly in the center. Grasses may accompany the flowers with good effect, and are so easy to paint that they may be recommended to the beginner as good subjects for the first studies from nature.

BUTTERFLIES.

Butterflies form a very pretty accompaniment to flowers on china. They should be painted in positions as natural as possible. After the sketch

is made the black markings and veining of the wings should be painted with *noir d'ivoire* (ivory black), and afterward the intermediate spaces filled up with the proper colors. For brown butterflies, sepia may be used. Take *jaune à mêler* (mixing yellow) for the common yellow butterfly, and shade with *vert brun* (brown green)

PALETTE FOR LANDSCAPES.

Colors Required.

Vert, No. 5, pré—Grass green.
Vert, No. 6, brun—Brown green.
Vert pomme—Apple green.
Vert noir—Black green.
Bleu ciel ou azur—Sky blue.
Bleu riche—Deep blue.
Vert bleu riche—Deep blue green.
Brun, 4 foncé—Dark brown.
Brun sépia—Sepia.
Jaune d'ivoire—Ivory yellow.
Jaune à mêler—Mixing yellow.
Carmine, No. 3, foncé—Dark carmine.
Noir d'ivoire—Ivory black.

Sketch lightly with a hard lead pencil. Wash in the sky with *bleu ciel* (sky blue) and blend it. Clouds should be taken out before it dries. This may be done by wiping off the color with a cloth. To prevent it from drying too quickly the color used for the sky might be mixed with a little more oil.

Shadows of the clouds may be painted with a grey made of ivory black and sky blue. If a yellowish tint is desired for the lighter parts, *jaune d'ivoire* (ivory yellow) may be used.

The distance can be painted with *vert pomme* (apple green) and carmine, allowing the apple green to predominate.

For a tint more purple, *vert bleu riche* (deep blue green) may be used with carmine.

For nearer parts, take apple green subdued with *vert noir* (black green), or *vert brun* (brown green).

These tints must all be applied very delicately.

The trunks of trees and particularly any branches relieved against the sky may now be sketched in with *brun*, 4 *foncé* (dark brown).

The foliage should be painted with short, broad touches, to give the proper effect. For the highest lights, when the color is yellow green, use *vert*, *No.* 5, *pré* (grass green) and *jaune à mêler* (mixing yellow). For the middle tints, grass green alone. Shadows may be made with the addition of *vert brun* (brown green).

A good tint for the dark shadows can be made from grass green subdued with brown green and a little deep blue.

Black green is a good color for very intense tints, but must be used sparingly.

Water may be painted with apple green and sky blue; also, with *vert bleu riche* (deep blue green) applied delicately. For reflections of trees, use black green heightened with grass green.

For earth, ochre, or any of the lighter browns, such as yellow brown, or sepia, may be used, subdued with black.

PALETTE FOR HEADS OR FIGURES.

Colors Required.

Rouge chair, No. 2—Flesh red, **No. 2.**
Brun rouge riche—Deep red brown.
Jaune d'ivoire—Ivory yellow.
Bleu ciel ou azur—Sky blue.
Noir d'ivoire—Ivory black.
Brun 4 *foncé*—Dark brown.
Brun Sépia—Sepia.

METHOD OF PAINTING A HEAD.

Sketch the design very lightly with a hard lead pencil. If you have difficulty in preserving a pencil outline while working on it, the sketch may be made in water colors, or with an enamel color mixed with water. This has the advantage, that it will allow you work over it without coming up. Take any reddish color and make a very delicate outline with the brush.

For the background, mix about one-third *noir*

d'ivoire (ivory black) with two-thirds *bleu ciel* (sky blue). With this mixture commence by washing in the background lightly, making it darker near the head and lighter toward the outer edges, where, when blended, it should lose itself in the white of the china. This tint should be laid very rapidly, leaving the outer edge in irregular, cloud-like masses. The color should be rather oily, so that it will blend better. You will hardly be able, however, to put in more than one-half before it is ready to blend, if the head is of any size. It can, however, be readily joined above the head where the tint is light. By the time you have washed in one-half your background, it will then be ready to blend, if the color has not been used too wet, and you can proceed to level the tint with a medium-sized blender. Be particularly careful to soften the edges into an insensible gradation toward the white surface. If you have not been quick enough, and your background has become too dry for this, you will have to wipe it out and begin over again, using a little more oil with the colors.

The other side of the background is finished in the same way, care being taken that the juncture with the side already done should show as little as possible.

You may then proceed to the flesh tint. For this take one-third *rouge chair No.* 2 (flesh red No. 2), and mix it with two-thirds *jaune d'ivoire* (ivory yellow). Be careful not to take too much of the yellow, as, if an excess of it is used, it will devour the red when fired. The tint will, of course, be made dark or light, according to the complexion desired. With this tint wash in the local color of the face and neck, carefully passing around your tracing if it is in pencil. It will probably be necessary to blend this tint, using a small brush.

You should be careful not to cover so large a surface with this wash that it will dry before you have time to blend it. The whole of the face should be done at once if possible, as otherwise it will be difficult to hide the juncture.

The local tint of the hair may then be washed in, and that of any drapery which may be col-

ored. Leaving this part of the work to dry, you may now return to the background, which will now, probably, be dry enough to work over, with care.

If it should not be dry enough, the piece may be put into the oven a few moments to dry the first washes.

Work over the background with cross hatchings of the tint previously used, taking a moderately large brush, and making the lines rather broad, not too long, and very slightly curved.

Form in this way a shading in the background, beginning very lightly inside the edge of the first wash, and proceeding with an insensible gradation toward the center, darkening it in this way around the head, according as you wish a dark or light background. Where it is suitable, a light background seems to have the most pleasing effect upon the white ground, and is also less difficult to paint.

In working over the tints first laid, be very careful not to have your brush too wet, as that will cause the under color to come up. The

damage thus done is very difficult to repair. This will not be so likely to happen if the work has been dried in the oven.

After the background proceed to the face. For the shadow tint mix one-third *noir d'ivoire* (ivory black), one-third *bleu ciel* (sky blue), and one-third *rouge chair, No.* 2, (flesh red, No. 2). Be careful not to have too much blue, as that will give the shadows too green a tint in the firing, although it will not show previously. More of the flesh color may be added when you wish to lighten the shadows, or when a more ruddy tint is desired. The features may be outlined delicately with this shadow tint, and then the masses of shadow should be placed. Put them as nearly as possible in their proper places, with a very light touch, and without blending if possible.

It may probably be necessary to blend the edges, and the darker portions should, perhaps, be lined and stippled in the finishing. Before the shadows are completed, the cheeks and lips may be touched with *brun rouge riche* (deep red brown), used very delicately. This color is rather

intensified than otherwise by the fire, and although it is an excellent tint for this purpose, it must be used with care.

The lips may be shaded with a little black mixed with the red brown, or with *violet de fer* (iron violet). The nostrils may also be delicately touched with this color, but should be darkened with the shadow color of the flesh.

The eyebrows and eyes should now be painted, the eyebrows with a light tint, corresponding to the local color of the hair, and the shadow color to be used in the hair. Blend them naturally into the flesh color with delicate lines and shadings. The eyes may be painted with *bleu ciel* (sky blue) shaded with black, or with brown shaded with black, if dark. The spot of reflected light on the eye may be left the white of the china, or touched with permanent white.

White may be employed for such purposes as this, or for pearls, to imitate embroidery or lace, and for the highest lights in white drapery, but must be used with care. It seems rather liable to spread in the firing, and sometimes to blister.

But to continue—if the hair is dark, take *brun*, *No.* 4, *foncé* (dark brown) and shade it with black mixed with the brown; or, if light, use yellow brown, or sepia, subdued with black. If very light, ivory yellow can be used for the first wash, and left for the highest lights, shaded with sepia and black. The touches of the brush in making the hair should be fine strokes, outlining and giving direction to the masses. The hair should never be blended.

These finishing touches of the hair, as well as those on the face, should be done with a fine brush. After the various parts have been brought to about the same degree of finish, they should be gone over again, and be brought together up to the highest degree of finish possible to the painter. It is well to know when to stop, however, as overworking is as bad as lack of finish. There is a great deal in knowing when to let well enough alone. When you do not see anything more to do, stop.

CHAPTER IV.

TINTED GROUNDS.

In mixing tints for borders or any considerable surfaces, it is necessary to use more oil than for other painting. It is especially desirable to mix enough balsam of copaiva with the color and the other oils, to prevent it from drying before there is time to blend it. The quantity of oil varies with the depth of the tint desired, and the particular color used, also the condition of the atmosphere at the time the ground is laid. Some colors, such as carmine and blue, require more oil than others, and are more difficult to lay. It is hard to give an idea of the amount of oil which should be used in any particular case. There is no danger of using so much that the paint will blister in the firing, when it is laid very thinly.

Enough color must be mixed to cover the en-

tire surface upon which the ground is to be laid, at once. If tube colors are used, it will simply be necessary to mix a little balsam of copaiva with them as they are taken from the tubes, to keep them from drying too rapidly. They may then be diluted with turpentine.

If the powdered colors are used they should be mixed with an amount of oil of turpentine, which would occupy nearly as much space as the powder, rather less of oil of lavender, and about twice as much balsam of copaiva. Afterward diluted with spirits of turpentine. For laying grounds. the color should be very thin, so that it will flow readily from the brush. Mix on a glass slab, and rub down well with a muller. When perfectly smooth, have ready a piece of the finest wire cloth, three or four inches square, bend it to form a depression in the middle, and strain the color through it, lifting it with the palette knife, and letting it drip through just before you are ready to use it, so that it may be free from any particles of dust.

Take a broad, flat brush, charge it well with

color, and pass it rapidly over the surface to be tinted. If a cup, hold it upside down by the handle, and make the strokes from the bottom to the top; or if you wish to tint the border of a plate, the strokes may be made across the flat edge, taking a direction from the center to the circumference. If a vase, you should begin at the top, passing around with short, over-lapping strokes, taking care that the color is not so wet that it will run.

When the surface has been covered, let it rest a moment, until the color begins to set, and, upon lightly touching the edge, it feels slightly sticky. Then go over it with the blending brush, holding the brush perpendicular to the surface upon which you are operating, just touching it, not dragging the brush or letting it rest upon the surface, and not twice upon the same place.

After waiting a moment or so, you may go over it again, and continue to blend it until the tint is perfectly even.

If the brush becomes charged with the color, it must be cleaned on a cloth wet with alcohol,

and left a few moments to dry, or it may possibly do to wipe it on a dry cloth. It is better, however, to have two or three blenders at hand, so that if one becomes unfit for use, another can be substituted at once.

Care must be taken that the brush, after it is cleaned in alcohol, should become perfectly dry before it is used again, as the alcohol will remove the color. Dampness should also be avoided when laying grounds.

A ball of cotton tied in a fine linen or cotton cloth is sometimes used for blending, instead of a brush.

The color which may have been allowed to go over the edge should be carefully wiped off as soon as you have finished blending.

By the use of a turning wheel the work of putting on borders is, of course, much facilitated. The wheel, however, is not absolutely necessary, except when narrow bands are to be made. A full border for a plate may be put on in the manner described above.

It is difficult to describe narrow bands and

lines, even upon circular pieces of china, as they are seldom perfectly round, and the line has to be adapted to a slightly uneven surface. It would be as well not to attempt work of this kind, which had better be left to the decorator.

Where dark grounds are desired, the color should be dusted on by the following process:

Take a few drops of the oil especially prepared for this purpose, thin with spirits of turpentine, and mix thoroughly, by rubbing down with the palette knife. Afterward, with a large brush charged with it, pass quickly over the surface of the china, being careful not to leave any spaces uncovered and to put it on as evenly as possible.

Have ready a ball of cotton tied in a piece of soft raw silk, and touch it lightly, distributing the oil evenly over the whole surface. After waiting a moment or so until the oil has become slightly sticky, take a large blending brush, charged as fully as possible with the powdered color you wish to use, and dust it over the prepared surface, without slighting any

part. If a surplus of powder lies upon the surface anywhere, brush it off very lightly.

As the powder arising from this process is disagreeable, as well as injurious, means should be taken to prevent its inhalation.

This method, after all, is rather uncertain in unskillful hands, it being very difficult to measure the success of the work until after the firing, which, by rendering the color transparent, brings out every defect.

Grounds of delicate tint, however, are very pretty, and can be easily managed, after some little practice, according to the directions given above.

Besides the colors used in painting, there are others especially prepared for grounds, which can not be mixed.

It is as well to procure colors for grounds in powder; especially, if they can be had, those prepared by M. Lacroix, of the quality No. 3, which are as finely ground as the tube colors.

If it is desired to paint a design upon the tinted ground, the ground must be removed

from the place the design is to occupy. If this were not done, the color underneath would in the firing mix with those superimposed, and spoil the tints. This may be done by either of the following methods:

First, the ground may be tinted, and, after it is thoroughly dry, the design may be scratched upon the surface and the color removed with a scraper. A stick of soft wood, with a flattened point moistened with turpentine, is also useful for this purpose; or, if the scraper alone is used, the surface uncovered should be carefully cleaned, after its use, with the end of a cloth rolled into a point and moistened with turpentine.

The design may also be drawn upon the tinted surface with a hard lead pencil (if delicately and correctly done), and the color removed as before.

Perhaps the second method would be the best for any one not quite sure of drawing the design correctly at once. That is, to draw the design on the china first in India ink or any water color which will show. The ground laid over this will not disturb the outline, and, the sketch showing

through it perfectly, the design can be easily removed by the process described after the first method. This outline will burn out in the firing. It would, however, be better to remove it as far as possible, especially if dark, in order that it may not interfere with the proper treatment of the edges of the painted design.

Designs in colors, black silhouettes or monochromes in grey, may be painted in this manner upon tinted grounds.

CHAPTER V.

MAT COLORS.

Since the introduction of the Royal Worcester ware, with its exquisite, ivory-like surface, and effective mat decoration of metals and colors, amateurs have been fired with an ambition to imitate it. Aside, however, from the production of pieces of "Royal Worcester," a very much abused term, by the way, the introduction of mat colors opens a new field to the china painter, wherein the most artistic effects can be produced.

After the soft harmony of the dead tints, those which take a glaze in firing seem garish in their brilliancy, and the painter is tempted to use the mat colors on all occasions. These colors are, however, unsuitable for ware intended for table use. The reason is that surfaces of articles decorated with unglazed colors are not

so easily washed as those which are polished, and it seems manifestly important that any thing intended for use should have a smooth surface, to which nothing would be likely to adhere, and which could be kept immaculately clean with little rubbing. There may be exceptions in the case of *bonbonnières*, or similar pieces, or even cups and saucers, where the surfaces are not much used.

The mat colors also form very beautiful combinations with the glazed colors in many decorative effects. These colors retain very much the same appearance after firing as before, so that it is easy to choose the tints desired from the great variety offered by the dealers. The mat colors are in effect the same as those prepared for underglaze painting, and in many cases the last named colors will do as well as those sold for the purpose. In the case of black I have found nothing so good as Lacroix's *noir* underglaze. In most cases, however, the underglaze colors, as well as those which are said to be especially prepared for mat overglaze, need

to have more flux added to make them adhere to the ware. All the mat colors I have used, except those of M. Lacroix, require an extremely hard firing to fix them. The French colors are not open to this objection, and fire very satisfactorily. There are numerous colors from which to choose, and of those I would suggest the following as offering sufficient variety:

Blanc crême mat—Mat cream white.

Brun rouge mat—Mat red brown.

Rouge à joues mat—Mat red for cheeks, or carnation.

Chair à plat mat, No. 10—Flesh tint, No. 10.

Brun bitume mat—Mat bitumen.

Brun jaune mat—Mat yellow brown.

Orange, No. 3, *mat*—Mat orange, No. 3.

Jaune, No. 2, *mat*—Mat yellow, No. 2.

Jaune, No. 3, *mat*—Mat yellow, No. 3.

Jaune d'argent mat—Mat silver yellow.

Vert mat, 32—Mat green, 32.

Vert mat, 34—Mat green, 34.

Vert mat pour fonds—Mat green for grounds.

Blue riche mat—Mat deep blue.

Noir mat—Mat black.

These colors are best procured in powder. They are most frequently used for grounds, and the grounds usually are of the light tints, especially cream, in imitation of the Royal Worcester. For this ground, which has the tint of old ivory, yellow or yellow-brown must be mixed with cream white until the desired tint is secured. There are preparations of these grounds already mixed from several American dealers. Those of Messrs. Grunewald & Busher, called the mat wax colors, are very good, and come in various tints—wax ivory for the light cream tint, with others, such as celadon, nile green, pink, fawn, chocolate, terra cotta, or olive. A beautiful deep cream tint can be mixed from white about three parts, yellow two, and bitumen one. *Rouge à joues*, applied lightly, gives a beautiful pale pink color, and *Vert*, 32, a lovely blue green. The dark colors can also be very effectively used as grounds with decorations of gold and other metals. Black gives a very fine

effect with designs of gold and platinum. For this, as has been said before, Lacroix's underglaze black works excellently.

These colors are usually applied in the method described in the previous chapter for grounds of glazing colors. After being mixed rather thin with a little fat oil thinned with turpentine, and a few drops of balsam of copaiva to keep the paint from drying too quickly, the color is laid on with a broad brush, and the surface is afterward made smooth and of an even tint by patting with a dabber of cottonwool tied up in chamois skin, or silk muslin. The dark colors must have a thicker consistency, and can be applied by strokes of a broad brush; but the best effect, in the case of dark colors, is given by dusting the color upon the surface already prepared with ground laying oil, as described in Chapter VI. This is not a difficult process, if the materials are right, and after practice has rendered the operator expert, but is usually a matter of some difficulty in unpracticed hands. The difficulty experienced in dusting on grounds

is frequently caused by the adulteration of the turpentine used. Much of the turpentine sold seems to be adulterated with benzine; and when this is the case, it causes the grounding oil thinned with it to dry in streaks, and it is impossible to apply the color evenly. If the process of tinting by dusting does not go on satisfactorily, suspect the turpentine, and try to get a pure article from another dealer. Devoe's rectified spirits of turpentine can be procured from any dealer, and it is better to use that preparation. As the dusting of color is at best, however, hardly a safe or pleasant operation, on account of its difficulty and the danger of inhaling the powder, perhaps the amateur would do better to employ the first method of tinting for dark grounds as well as for light ones. If the tint is not dark enough the first time, a second coat can be applied after firing. When mat colors are used in decorative designs, they are employed just as other colors, and mixed with each other, if desired, with the difference that they are not subject to the same change in appearance

after firing. They are usually employed in conventional decoration in combination with metals, and not in the painting of any naturalistic design. They could, of course, be used in this way, but, in most cases where the decoration of china is concerned, conventional design is in better taste. Very beautiful decorative effects may be produced by combining the mat colors not only with the various metals, but with the glazed colors. The design may be of mat color upon a ground of glazed color, or a mat surface can have a decoration of glazed color, which will not have a very brilliant appearance on account of the dead surface upon which it is applied, but which will give a pleasing effect. Designs in mat color can also be placed upon the uncolored surface of the china and surrounded by gold outlines and other accessory decorations of gold to form a ground work. Beautiful effects are produced by the use of deeply-tinted mat grounds afterward covered by a light application of gold, either dusted on or dabbled thinly over the surface with a blending brush.

CHAPTER VI.

OTHER PIGMENTS AND MEDIUMS.

Water Colors.

Several years ago vitrifiable colors were introduced, which were put up in pans as moist water colors are prepared, and with which water could be used as a medium.

These colors are in all respects similar to the ordinary china colors in tubes, except that in working, water is used instead of spirits of turpentine, and a preparation called megilp, or water color medium, in the place of fat oil. The colors fire as other china colors, and are mixed and used in the same way. They may be recommended to those who find turpentine very disagreeable or even injurious.

The best colors that I have seen, prepared in this way, are the Royal Dresden china colors.

Of these a good selection would be the following: Relief White; Egg Yellow; Olive Green; Turquoise; Grass Green; Dark Blue; Carmine; Superior Pompadour Red; Brown Red; Flesh Red; Yellow Brown; Dark Brown; Grey for Flesh; Brunswick Black; Flux.

By the use of these colors, and the employment of alcohol in metal work, in the manner to be described hereafter, the odor of the turpentine may be avoided.

Although turpentine is generally used, and seems to be the most available and convenient medium for ordinary use, the matter is one of comparative indifference, and may usually be left to the idiosyncracy of the worker. The colors in powder contain the flux necessary to cause them to adhere to the surface of the china when subjected to the necessary degree of heat. All that is needed, then, is a medium which will render them of the proper consistency to be applied with a brush. Turpentine, with a little fat oil, ordinarily produces this effect. Some decorators use also clove oil, tar oil, oil of lav-

ender, or Dresden thick oil. If, however, the odor of these oils is disagreeable, water and the water-color medium can be used.

The medium is of little importance, the only requisite being, that the color shall be in such a condition that it can be applied smoothly with the brush and that it shall not have so much oil in it as to attract the dust or blister in the firing.

Vitrifiable Crayons.

The vitrifiable crayons introduced by M. Lacroix form a very interesting contribution to the variety of pigments for china decoration. These crayons are vitrifiable colors put up in pencils, and are intended for use on ground glass. Very beautiful work can be done upon this material; but we are now interested only in porcelain, and upon this, also, they can be most effectively used.

To give the proper surface to take the crayon, a mat ground must be applied. This can be of any color, but the most suitable is the light

cream, Royal Worcester tint. After the ground has been fired the crayons can be employed in exactly the same manner as charcoal or crayon upon paper.

The effect of a warm tinted crayon drawing upon the cream ground is very good. A stump can be used to blend the strokes of the crayon, or to rub in a tint, in just the same way as in charcoal work on paper. The pencils can also be used in connection with brush work. They can be sharpened as lead pencils, but the knife must be very sharp, as the crayons are very brittle.

The colors to be procured in tubes are also prepared in the form of pencils, and the same selection can be made; but the most appropriate for this work are the grisaille tints. Drawings can be made in a single color, but they are more pleasing when several tints are used, for instance when the drawing is made in a warm brown with accenting touches of deeper, perhaps reddish tones in the shadows. Of the desirable grisaille tints may be mentioned:

Grisaille fine teinte noire.

Grisaille ordinaire teinte noire.
Grisaille ordinaire teinte rouge.
Grisaille fine teinte brune.
Grisaille ordinaire teinte brune.
Grisaille fine teinte violacée.

Good combinations of these tints can be made with deep brown touches in the shadows with brown gray, or possibly with a little black gray; or, red brown with dark brown or brown gray; or, fine brown grey, which gives a pleasing grayish olive tint which may be used in softening the tints of the brighter colors.

The warmer brown or reddish tints will be found to be the most pleasing. There are, indeed, endless combinations in which these colors can be most effectively and artistically used, but these must be left to the taste of the decorator.

CHAPTER VII.

BURNISHING.

The metals come from the fire with a dead surface, which must be burnished or rubbed to the degree of finish desired. A dull polish is usually to be desired, and this is best secured by the use of a glass brush.

This tool, however is by no means a safe or pleasant one to handle, and must be used with the greatest caution. A fine dead surface can be secured by burnishing with an agate burnisher, and then re-firing. On coming from the fire again, the surface will have the dead finish desired. Or, after burnishing, the metal can be rubbed with putz-pomade, which will take off some of the brilliant polish, and leave a beautiful mat surface. This latter treatment is especially successful with decorations of gold and silver, on black or dark grounds. Metal can

also be polished with the aid of whiting, rubbed on with chamois skin. All these methods are more troublesome, as well as less satisfactory, than the use of the objectionable glass brush. This gives a fine surface with the least amount of trouble, and there seems to be nothing which will quite take its place. If it is used, however, great care must be exercised to prevent the inhalation of particles of glass, or to keep them from falling upon the clothing, or sticking into the hands. The particles seem usually to fall, so that the greatest danger is to have them forced into the skin. The dropping of the sharp particles upon the clothing can be prevented by holding the object to be polished as far away from the body as possible, and catching the bits of glass threads which fall off upon a paper. Heavy gloves should be worn to protect the hands, and the brush should be grasped as close to the rubbing surface as possible.

When a bright surface is desired, as is frequently the case with gold, especially in line work, the metal must be rubbed with an

agate burnisher. These tools are of different shapes, and it is best, perhaps, to have one with a sharp point, and another with a blunt, rounded end, to suit the forms of the various surfaces.

The burnisher must be passed over the surface with a light, firm touch, not held in such a way or with a pressure so strong that a careless movement might result in a scratch on the surface of either the china, or the gold, but with a delicate touch, and a pressure just sufficient to burnish the metal. Every point of the surface must be passed over, for, if the strokes of the burnisher have not covered every part, the surface will have a scratchy appearance, which will cause the gilding to appear imperfect. The process of burnishing must be continued until the gold presents an evenly brilliant appearance, which condition can not fail to be secured by the skillful use of the burnisher, provided the gold has been applied thickly enough to cover the surface of the china.

When properly fired, the gold will come from the kiln with a slight golden luster. If the sur-

face is perfectly dull, like yellow paint, the gold has probably not been fired at a temperature high enough to attach it to the surface of the china, and it should be tried cautiously in some place to find out whether it has been fired sufficiently to bear burnishing. If the surface is not hard, and does not take a brilliant polish at once, the piece must be re-fired.

CHAPTER VIII.

PASTE FOR RAISED GOLD.

The effect of metallic decoration is very much enhanced when the outline, or even the entire design is raised above the surface. This is done by means of a preparation which has body enough to produce the necessary relief. As it is generally used under gold, it is appropriately colored. That prepared by Hancock & Sons, and which is of a deep yellow color, is the best.

There are several different ways of mixing the paste; some using syrup and water, and others oil. The method commonly employed is to mix the powder with oil of tar, and thin the mixture with spirits of turpentine. It must be kept very thick, as if used too thin it will spread and ruin the work, and is better if mixed some time before using. There is, in fact, but one state in which it can be satisfactorily used,

and it is said that in factories, when such work is produced, the workmen have several saucers of the paste at hand, in various stages of moisture, so that one can always be found in just the condition necessary for good work.

The tar oil seems to be the best for use in raised work, as it gives the mixture that tenacious, stringy quality desired in order to form good lines of paste.

The oil, however, exhibits its tendency to spread, especially if too much has been used. The turpentine with which it must be thinned also evaporates, and increases the oiliness of the mixture, rendering it still more liable to spread. This troublesome tendency is in a great degree prevented by using alcohol to thin the mixture instead of turpentine. The alcohol dries so quickly that if the paste has been made too thin it soon acquires the right condition, although with the disadvantage of holding it but a short time before it must be thinned again. Its action in restraining the tendency to spread, however, more than counterbalances this drawback, and it

introduces no dangerous element. For the danger of the mixture becoming excessively oily from the use of turpentine, is one which not only affects the working of the paste, but may cause it to blister in the firing.

Sometimes, after alcohol has been used, the mixture gets into a condition where the oil separates from the powder. When this happens, a drop or so of turpentine will usually set it right again, or some fresh powder can be added, or a little more tar oil may change the condition of the mixture.

To do good work the powder should be so well ground with the oil that the paste is perfectly smooth. When a very delicate line of paste is desired, it may be made by the use of the lining pen. For this method of application the paste can be thinner than when intended for use with the brush, and it would be better to substitute balsam of copaiba, or Dresden thick oil, for the tar oil. Either of these oils causes the paste to work very smoothly, with, however, a greater tendency to spread than is given by the tar oil.

This renders them less satisfactory for lines made by the brush, for which nothing seems to do so well as tar oil thinned by alcohol. This may, however, be a matter of individual experience, as some use Dresden thick oil with good effect.

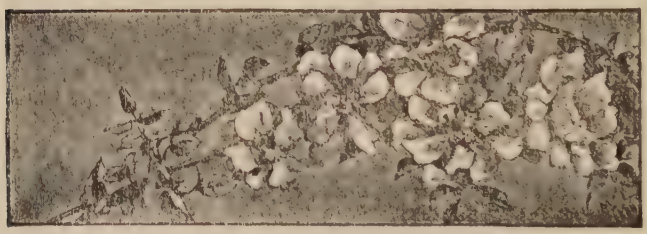
Lines made with the pen, however, can not be raised so high as when made with the brush, unless a second application is made after the first has dried. They can, however, be made of a more even degree of thickness than with the brush, where the slightest variation in the condition of the paste has a tendency to change the appearance of the line.

The paste must be fired before the gold is applied. It is sometimes possible to fire gold and paste at the same time, but it is always safer, and the work will usually present a much better appearance, if the paste is fired before it is gilded.

To prevent accidents in firing, the paste should be thoroughly dried before it is put in the kiln, and it should dry naturally, not by the application of heat. As the paste is usually ap-

plied upon tinted grounds, a piece decorated in this way requires several firings—first for the ground, then for the application of paste, and lastly for the metallic decoration.

When the gold is applied to the paste it should be mixed rather thin and with very little, if any, fat oil. It can then be taken up on the point of a fine brush and just touched to the line of paste. The porous paste quickly absorbs the turpentine, leaving the gold upon its surface without the danger of having it spread over the edge of the line to the ground. By using very little oil the danger of scaling in firing is also avoided.



CHAPTER IX.

GENERAL REMARKS ON DECORATION.

In the decoration of china, appropriateness, or adaptability to the purpose, is of the first consideration. The design must be of such a character and so placed upon the surface as not to interfere with the lines of the object decorated, and must also be subservient to the use for which it is intended.

Decorators too often seem to have the idea, only, of doing something which shall be pretty in itself, without any reference to the object to be decorated, or to its future use. Although the design may be very pretty in itself, it may be so entirely inappropriate for the position in which it is placed, as to be very far from pleasing.

The artist should always have in mind the foundation upon which the decoration is placed.

This is of the first importance. If one wishes to paint a picture, it may be done upon china, and may have certain beautiful qualities peculiar to the material, but it must be done within certain limitations, and the artist is always more or less hampered by his medium. The most realistic rendering of nature can best be accomplished in other mediums. Moreover, if it were possible to accomplish this naturalistic treatment with such material, there are few objects upon which it would be appropriate. A plaque which is intended to hang upon a wall may have a picture painted upon it, but even in this place a conventional design, with a harmonious arrangement of color, would be more pleasing.

In the case of a vase, or other ornamental object, it is important that the lines of the decorations be of such a character as to bring out the beauty of form in the object decorated; not to display a pretty piece of painting, which may be entirely out of harmony with the surface upon which it is placed. In all cases, the object decorated should be held in some consideration. If

it is of beautiful form, then the aim of the artist should be to enhance that beauty, while decorating its surface, in such a way as to render it still more beautiful. In the decoration of an object intended for use, the application seems yet more obvious.

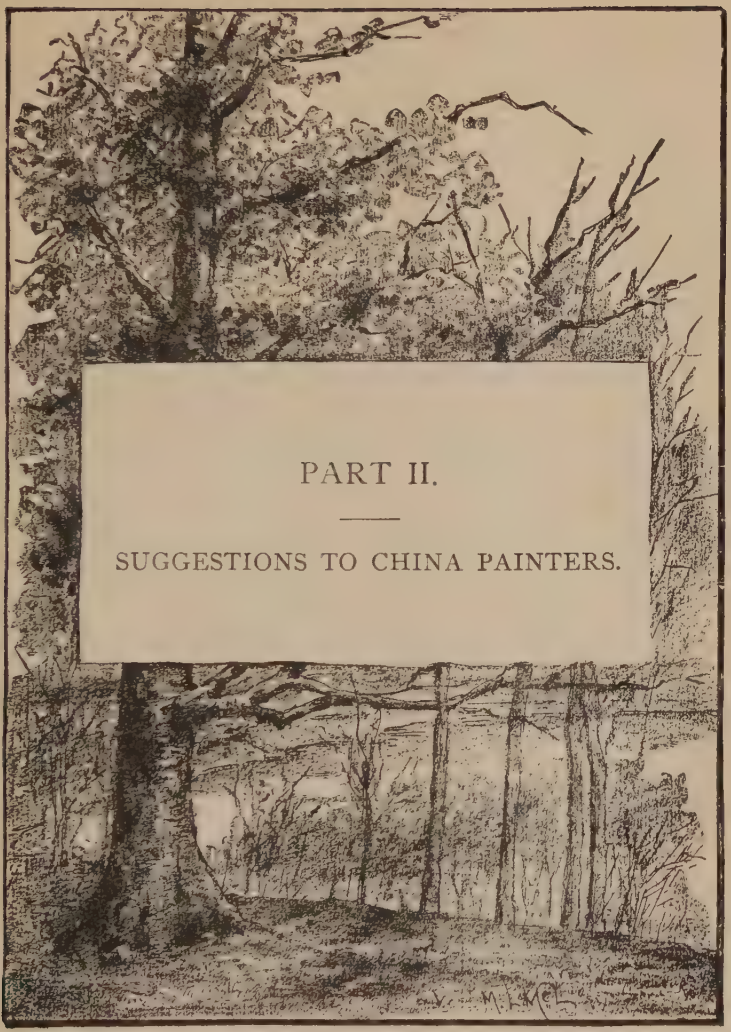
A plate, for instance, may, or may not be a very beautiful object in itself, but the intention of the decoration must be to render the piece more beautiful, while at the same time it does not interfere with the purpose of use, for which it was designed.

And here again, I would like to urge upon all who undertake the decoration of china, the importance of a knowledge of the principles of design. Too little thought is given to this matter, and the student far too often depends upon the teacher, or some other outside help, for ideas. Too often is the teacher expected to give not only instruction in methods, but ideas for design also. This is more than any pupil has the right to demand, and this state of affairs is good neither for teacher or pupil. The teacher is

overtaxed with the extra work of not only planning the design, but even it may be drawing it upon the china, while the pupil exhibits something as her work, to which she has no just claim, as the most important part has been done by another. But this brings us back to the charge so often urged before, that it *is* necessary to learn to draw before attempting decorative work. Not to know how to draw well, not to know how to sketch from nature, for that requires years of practice, but to have required sufficient manual skill to imitate simple lines, and to adapt from natural forms graceful motives for decoration. It is not such a difficult matter, but the hand must be trained to surety of touch, and the eye to perceive the suggestions f the varied natural forms displayed before us. The pleasure of being able to record the innumerable and exquisite combinations, of color and form all around us, with the something of creative skill needed to adapt them to our use, which gives a feeling of ownership in the studies thus made, will more than compensate for the labor required to ac-

complish these results. In the words of Hamerton:

"This indeed is a noble object, to gain admission into the paradise of natural beauty, and whoever labors bravely for that end shall have his reward."



PART II.

SUGGESTIONS TO CHINA PAINTERS.

CHAPTER X.

THE IMPORTANCE OF DRAWING.

BEFORE passing to the consideration of painting on china, I would like to say a few words to novices in the art upon the necessity of learning to draw before any attempt at coloring is made. If treating of any but ceramic painting, insistence upon the desirability of being able to draw correctly before painting might be superfluous; but it is so often asserted that a course of drawing is unnecessary before beginning to paint on china, and the results of this belief appear so frequently, disfiguring the fair face of some piece of porcelain, that I can not forbear entering again a protest against such a fallacy.

It is not my purpose to advocate a system such as has

recently been, if it is not now, pursued in our art schools, where the student plods his weary way through drawing from the flat and the round, year after year, but to argue that some knowledge of drawing and designing is necessary before any kind of decorative work can be practiced successfully. Painting is only drawing with color; the one can not exist without the other; and to say that any one can paint without knowing how to draw, is to state an absurdity. The idea seems to prevail that it will do very well to obtain something to copy, and then trace the design upon the object to be decorated; but it is quite certain that the person who can not draw the design correctly from the copy, can not, after a tracing is made, keep the outline from distortion during the process of painting. I would not prescribe a certain course for every one, or say that such a time should be spent or such a method of training should be pursued in every case, as all that depends upon the capacity and the exertions of the student.

The decoration of china, while it affords possibilities for the display of the highest style of art, does not, as a general thing, call for subjects of so high a range. Plaques and panels may be treated as pictures, but articles for use should be decorated with simple natural, or, what is still better,

with conventional forms. It may not require great skill to make a good conventional design, but any decoration at all, to be well done, requires a certain steadiness of hand and nicety of touch, only acquired after considerable practice in drawing. If the student who is not possessed of great skill in drawing, or who does not wish to spend a long time in learning how to draw, will be content with simple forms of decoration, all may be well; but let such an one refrain from representing the human face and form divine. This caution might be considered unnecessary, but I have in mind certain frightful examples where the ambition of the painter was only equalled by his temerity in attempting the representation of such an intricate subject, and the result was a thing of horror. What was the cause of failure? The student had not learned the first principle of drawing, the art of seeing. The secret of good drawing is simply this and nothing more, and all teaching that does not tend to make the student observe nature and learn to see things as they are, is worse than useless. The teacher must, however, have the co-operation of the student, upon whom alone success finally depends. Would-be students often seem to think that if they could only obtain the instruction of some artist whose work pleases them, their progress to suc-

cess would be assured. Nothing is more absurd. Technical instruction can be obtained from the teacher, and a wise teacher can give a student valuable hints for his guidance, but the application must be made by the student. All teaching that does not aim to make him see and think for himself, is a positive injury. Good drawing is simply seeing things correctly, aided by the secondary qualification of having the hand trained to obey the dictates of the brain. The brain is the motive power, however, and if it has not acquired or can not attain the faculty of comprehending the work to be done, the hand may work on without any good result.

It was the late William M. Hunt who told a pupil that all the work of the drawing she had upon her paper could have been done in ten minutes, where she had been working hours. Nothing could be more true. It is only the brain-work that counts. Therefore, let the student who would learn to draw so that he may produce good decorative work, open his eyes to see nature in her various forms, and train his hand to represent what he sees, not what he fancies he ought to see, or what somebody else might see. Having seen, let him put his ideas into his work boldly and fearlessly.

CHAPTER XI.

TECHNIQUE.

TECHNIQUE may be defined as the method by which an artist finds expression for his art. The technique of his work is good or bad according to the degree in which he has gained control of his materials. If the painter is mastered by the materials, the work will be feeble and hesitating, but if with conscious power he can infuse his own spirit into the inert matter and force it to do his will, the result will be the best expression of his artistic feeling, a masterly technique. Few artists can express themselves equally well in all materials. One may find his freest expression in oil-colors, another in water-colors, another with the pen, and another with the etching-needle. In each case he must not be hampered by his materials, but must work on, almost unconscious of the

medium by which his ideas are expressed. As in every other artistic handicraft, the colors used in porcelain painting require a certain kind of handling to produce the best effects, and it is of this, the technique of china painting, that I now wish to speak. To acquire a good method is not an easy task. At first, it seems to the learner that there are unusual difficulties in the way. In painting on china there are certain obstacles to a free handling peculiar to the surface upon which the colors are laid. On the other hand, there are certain advantages to be derived from these same troublesome peculiarities, such, for instance, as the ease with which lights can be taken out or the work erased if unsatisfactory. The method of working is more like that employed with water-colors than that used with oil, as the washes of color are applied thinly, the tint of the ground supplying the light. But the smooth, slippery surface makes it necessary to use a different method of laying on the colors.

In painting on paper with water colors, the tint is absorbed into the paper as a stain, which is not easily removed in working over it. The glossy, non-absorbent character of the surface of china, however, renders the practice of laying repeated washes over any extended space impossible,

unless the first tint is fired and so fixed. It will then be easy to work over the washes already laid, and now that the introduction of portable kilns has rendered firing at home practicable and so lessened the expense of the process, the amateur may indulge in repeated firings. More than one or two firings are, however, seldom necessary, except in the case of large work, although a greater number might be of assistance to the beginner. With care, after the necessary skill in using the colors has been acquired, it is comparatively easy to work over tints already laid without previous firing.

This requires, however, a certain degree of dexterity, and since much depends upon the way in which the colors are laid, it would be well for the beginner to practice laying washes of color over other washes of color before attempt- to paint pieces to be fired. The effect of transparency produced by the vitrification of the colors in firing, will to a certain extent clear up the muddiest painting, but to obtain the full brilliancy and best effect of the colors, they must not be overworked. "Niggling" here will produce the same disastrous results as in oil or water colors. Having decided what you are going to do, the color must be laid with a light, firm touch, just where you intend it to

go, and then be left to dry; a novice seems to be irresistibly tempted to go back over the tint just laid to attempt an improvement. This is a bad practice, for although an adept may work into the wet color to produce certain effects, it is a ruinous method to a beginner. However bad the tint may look as laid, it will only make it worse to work over it while wet, and the indulgence in such a practice leads to feeble and hesitating work. Let it dry, then work over it lightly, to deepen or modify the tint.

It is easy to try upon the palette the color with which your brush is charged, to see if it is the desired tint, before using it upon your work. Turpentine is used in the same way that water is employed in painting in water-colors, to dilute the colors, but as the surface of the china is not absorbent, it is necessary to use the color as dry as possible. If too much turpentine is used, the color will spread and dry with a hard line around the edge. This caution must be observed especially in working over tints already laid, and the advice given above, as to leaving each touch to dry before trying to work over it, must also be heeded. It is possible to lay tints one over another any number of times, if the previously laid tint is allowed to dry before another is applied; but if in laying one of these

over the other you touch the work a second time while it is wet, all you have done will be spoiled. It is the practice of some decorators to use clove-oil as a medium. Although it is possible, perhaps, to lay the color more smoothly with this medium, it dries too slowly; and unless you have a convenient arrangement for drying by artificial heat, its use is an annoying hindrance to continuous work. Drying so slowly, it is also likely to collect all the dust floating near it in the atmosphere. My own preference is for a medium that dries as quickly as possible, and for that purpose fresh spirits of turpentine, not having been kept long enough to become oily, seems the best. For those to whom the odor of turpentine is disagreeable, alcohol will furnish an excellent medium, having the merit of drying still more quickly than turpentine.

The brush, barely moistened with the medium, and charged with the color, must be held firmly and swept with an even pressure over the surface where the color is to be laid. If the painting is the representation of a natural object, the strokes of the brush should take the direction of the curves of the object. For instance, in painting a leaf, think first what direction is taken by the rounded forms, and make the strokes of the brush corre-

spond, just as if you were modelling the leaf. Only in this way, and by a correct translation of the tones of light and shade, can an effect of roundness and relief be given. If the painting consists of a conventional design, the colors should be laid as flat as possible, and if necessary a blending brush can be used to produce an even tint; but I would not advise the use of the blending brush, unless it is absolutely necessary. All teasing or overworking of the colors tends to loss of clearness and brilliancy in the painting. To recapitulate: Before you touch your work, think what you desire to do, and then endeavor to accomplish it with as little circumlocution and hesitation as possible. Do not lay the color in little dabbling strokes, but with a firm, free touch. It is only in this way that a sound technique can be acquired.

CHAPTER XII.

DESIGNS.

IN selecting a design with which to decorate the surface of any product of the ceramic art, the first question to be considered is that of appropriateness. It is the surface that is to be decorated, and the design must be planned with reference to the curves of the object, and must enhance rather than diminish the beauty of its form. The decoration must also be appropriate for the uses to which the article is to be devoted. Just here the question of naturalistic or conventional design comes in. As a general rule, it may be said that for all ceramic objects conventional designs are in the best taste, but practically, the question resolves itself into that of the destination of the decorated object. If a plaque or panel is to be hung upon a wall, there seems to be no

valid objection to the painting of a naturalistic design upon its surface. It occupies the same position as a picture, and there can be no reason why it should not be treated as a piece of paper or canvas, except the technical hindrances which render the painting of a picture upon porcelain more difficult than the accomplishment of the same result upon the former materials.

A vase or cup may also be decorated with a naturalistic design, but it should be such a one as would not detract from the appearance of roundness, and therefore if a design of that character be used, it should be a painting of flowers, not a landscape or figure. Either of these subjects would be out of place and lacking in decorative effect in that position, but the inappropriateness of such a design on a plate intended to be put to the ordinary use of the article, is still more obvious. A plate may, however, be used as a plaque. If intended to hang upon a wall or to be displayed upon an easel, there can be no harm in choosing any subject that would be suitable for a picture to be used in the same way, simply because it is a plate. The form of a plate is frequently very good for use in this way, and being so, there is no manifest impropriety in making a decorative plaque of it.

In the case of articles intended simply for use, the rule of appropriateness of design should be more strictly adhered to, and conventional designs only are unobjectionable. After appropriateness, decorative effect and harmony of color should be considered. The design should be such as to make the object more beautiful, really to decorate its surface, and the colors should be so chosen and arranged as to produce the most harmonious effect. Success in the last-named requisite is largely due to a natural gift, but may to some extent be cultivated by the study of good models. Beauty and correctness of form should also be considered.

We have then, as the requisites of good conventional decoration, appropriateness, decorative effect, harmony of color, and truth and beauty of form. The question now arises as to the source from which subjects for decoration should be drawn. As in all other kinds of art, the only true inspiration is given by the study of nature. Just as in naturalistic painting, so also in decorative work, nothing worthy the name of art can be produced without careful and reverent study of natural forms. As to appropriate subjects for decorative work, it may be said that for plaques or panels, the human figure is the noblest subject, and one

that is appropriate for such use, but for articles of ordinary utility designs should be drawn from lower forms of life.

For this purpose flowers and plants offer the most available as well as beautiful subjects. With such motives for decoration within reach of all, why should the decorator of por-

celain, as is too frequently the case, depend upon copying printed designs and badly drawn and worse colored chromos? A little time bestowed upon the study of decorative art from books and good specimens, and a little thought as to the planning and execution of a piece of decoration, would be far more beneficial than the thoughtless copying of the published designs. All originality is lost in slavish imitation, and there can be little satisfaction to the copyist or to the spectator. Decorative art should exhibit individuality, should be an outgrowth of the life and surroundings of the artist.

We have said that the inspiration of good decorative design must be drawn from nature, but the fact of its being conventional presupposes a certain liberty in the adaptation of natural forms. Let us suppose that a flower is taken as a subject for a decorative design: The artist, instead of rendering the roundness of the object, while adopting the form, makes no attempt to give roundness. The tints of color are laid in flat, following the local color of the flower, or they may be changed so as to produce the decorative effect desired. The form can be rendered with a degree of irregularity corresponding to the natural growth of the plant, or can be severely conventionalized and so

rendered as to produce an almost geometric form. The recurrence of flowers and leaves upon the stem can be arbi-

trarily fixed by the artist according to the effect desired, and the form of the object to be decorated.

But in all this liberty which is allowable to the decora-

tive artist, he must not do violence to the truth. Having selected a certain type of natural form upon which to found a scheme of decoration, he should adhere to that type, and nothing should be introduced into the design which would be out of harmony with it. This rule is often violated through ignorance or carelessness. For instance, I have seen a decorative design representing the ivy with tendrils, or a design in which a scroll was formed by making the stem of a flower pass through the latter, and continue its course with other leaves and blossoms. This last is one of the vicious features of the ornamentation of the period of the renaissance, as also that other enormity of drawing human figures which ended in scroll work. I maintain that the decorative artist, while allowed the greatest liberty in the adaptation of natural forms commensurate with truth, has no right to violate the forms of nature by producing such deformities.

To attain high excellence in this as in any other branch of art, requires a certain natural capacity, in addition to serious study; but here, as elsewhere, there are degrees, and if a design is unexceptionable as far as it goes, it will be acceptable, no matter how simple. Art students are too seldom taught the principles of decoration. Their instruc-

tion, as a general thing, tends toward the attempt to make artists of them by the study of the higher branches of art, which in ninety-nine cases out of a hundred will result in failure. If the time spent in this way were applied to the study of the principles of decorative design, the outcome would have a far greater value both to the student and the community at large.

The good results of such instruction in the schools of design in England are evident in the excellent patterns of some of the wall-paper and other fabrics imported from that country. It is to be hoped that our own schools will adopt a like enlightened and practical system of instruction. In the meantime I would urge those who essay the practice of decorative art in the painting of china, to make an attempt to produce something which shall exhibit individuality, and not settle down to the slavish copying of the designs of others.

It will require some thought and study, for like everything else that is worth doing, it is not easy; but the satisfaction of having produced something original, the exercise of the creative faculty even in a small degree, will give such pleasure as will be an ample compensation for the pains.

CHAPTER XIII.

LESSONS TO BE DERIVED FROM JAPANESE ART.

THE treasures of Japanese art, which during the last few years have been brought within the reach of all people of artistic tastes, have produced a profound impression. Their excellence, in a decorative point of view, is everywhere recognized, and the study of these specimens of an original style of art has resulted in a desire to imitate them. It is not in this way, however, that good can be derived from the study of Japanese art. The reflex action of all such imitative work is injurious to the copyist who, in proportion to his indulgence in it, loses the power of vigorous, original production. Besides, Japanese art can not be truly copied; the spirit of the original will necessarily be lacking. It is like trying to copy a sketch by some great master of drawing. It looks easy, yet this sketch, which seems so lightly and carelessly

done, is the expression of years of hard study added to great natural ability, and is in itself the very highest exercise of art—that which conceals art. Those who attempt to copy Japanese art commit the same mistake the beginner would be guilty of, who should attempt to copy the sketches of a master. The simple design of the Japanese artist is the expression of much careful study as well as natural taste and love for his work, which together produce a result that is inimitable. The greatest benefit can, however, be derived from the study and application of the principles upon which his work is produced. Good service in the cause of decorative art would be rendered by one who, with sufficient knowledge of the subject, would trace the causes which have produced such a unique school of art, and formulate the principles which underlie its expression. Enough can be seen from a superficial study of the methods of these artists to furnish a lesson of great value to decorators. The chief source of inspiration is found to come from a loving and observant study of nature, and in certain directions the evidence of this study is very apparent. In the sense of beauty of the human figure, and also in the expression of emotion aside from the humorous and grotesque, the Japanese are lacking; but in

the lower orders of natural forms their knowledge, as well as the skill displayed in their portrayal, is marvellously exact. While merely suggestive, and never exceeding the proper limits of decorative art, their designs exhibit a consummate knowledge of the principles under which nature's effects are produced. They follow the methods of nature in obtaining diversity, while adhering to methodical rules. They do not try to make the two sides of a thing alike, but everywhere show an inherent dislike of sameness and repetition, while at the same time retaining the proper balance and proportion of the parts of the design. In this they adopt the principles everywhere displayed in natural forms. For instance, among plants there is a certain law of development. The leaves upon the stem are produced at regular intervals, and spring from it at a certain angle, according to a given arrangement peculiar to the particular kind of plant. The number of the petals, the stamens, the pistils, and the divisions of the calyx correspond in each flower, and the flower-buds are produced from the axils of the leaves, or according to a certain arrangement upon the end of the branch. In spite of this methodical order, however, nature, like the true artist, is an adept in the concealment of art, and one would never discover the

plan of this disposal of the parts without the most careful observation. By the massing of the whole, a little variation of the shape of a leaf here, the appearance of a tiny bract upon the stem there, and then from the beautiful changing tones of color running through all, the charm of nature is produced. The Japanese artist has noted these various facts in nature, and cunningly makes use of them. His flowers, while treated with the greatest freedom of conventionality, still adhere to the plan of growth peculiar to the particular plant represented.

A valuable lesson can also be derived from the painstaking care of the Japanese artist, who lovingly works upon the article he is decorating, sparing no pains to make it beautiful, not only upon the outside, but in parts that will scarcely be noticed—upon the ends, the under side, even upon the inside of a box. It can not be denied that this spirit, in which the artist worked with infinite pains and with no thought of sordid gain, is passing away with the increased demand for these wares, brought about by the opening of Japan to commerce with Europeans. Few artists can withstand the temptation to over-production induced by an inordinate demand for their work, and when the desire of gain invades the mind of the artist, the spirit, in which only, good work can be produced, disappears. The Japanese

have not remained invulnerable to this temptation, and they, while trying to adopt the forms of European civilization with incredible rapidity, are inclined in matters of art also, to leave their own better methods, and copy the vitiated specimens of art produced by the people whose manners and customs they admire. It is a melancholy fact that thus one of the most original schools of art that the world has ever seen is fast becoming deteriorated. While yet we can see earlier and purer specimens of this art, we should not fail to profit by the lessons to be derived from it.

The technical skill, as well as the taste for color, which seems to be a natural inheritance of these people, is difficult to emulate, but the study of nature revealed in the work of the Japanese artists should furnish a model for our designers. It is only upon such study and by the application of such principles that a vigorous and original school of decorative art can be founded. This is what we in America need more than anything else. The atrocities in design, which we see every day, would not be perpetrated, if decorative artists respected their work enough to make it a matter of serious study, and sought for inspiration at the only source from which it is to be derived, the open book of nature.

CHAPTER XIV.

PREPARING GOLD AND SILVER FOR THE DECORATION OF PORCELAIN.

THE number of metals which it is possible to employ in the decoration of porcelain is limited to three: gold, silver, and platinum. Of the advantage in the use of the first of these, which forms such a splendid auxiliary to the colors of the painter of porcelain, it is unnecessary to speak. Although gold is in common use, the method of its preparation is not generally understood, and as usually inferior preparations only are obtainable, I have thought that an account of the best method of preparing it would be useful to amateurs who might desire to prepare it themselves. There are two methods of doing this. In both, the metal is dissolved in aqua regia and precipitated from the solution in the form of a brown powder.

In one, the gold is precipitated by the use of copperas, and in the other, by mercury. The latter is less costly than the former, as the deposit of gold in the form of powder is of greater volume, but the gilding produced by it is not so heavy, or so durable. It is this method, that is generally adopted in the production of commercial wares, and any one who has used a table service decorated with such gilding, does not need to be told how quickly it wears off under the action of repeated washing. I would, therefore, recommend the first method, precipitation by copperas, to those amateurs who can afford to incur the necessary outlay of time and money in order to decorate their porcelain with a fine and durable gilding.

The metal can be procured of the necessary degree of purity from a jeweler or at a dental depot. The price is eighty cents per pennyweight. Old jewelry of undesirable shape or inartistic workmanship can also be used, but it is so frequently combined with the baser metals in the way of filling or alloy that it is not so good for the purpose as the pure gold procured as above.

Place it in the bottom of a graduated glass and pour about an ounce and a half of aqua regia upon it. Aqua regia is a compound of equal volumes of chlorohydric

and nitric acids, which may be procured from a chemist. Let it stand until the next day, when, if the metal is not entirely dissolved, the process can be facilitated by pouring the solution of gold, which has been formed, into another vessel, and adding a little fresh aqua regia to that which remains. The solution of the gold in aqua regia forms a chloride of gold. This, it may be said in passing, is an article of commerce and can be procured of the chemist, but it is the better plan to dissolve the gold coin. It is not difficult to effect the solution of the metal, and it need not be disagreeable, although the fumes of the aqua regia are unpleasant. It is not necessary to carry on the process in a close room. The vessel in which the solution is effected can be placed outside the window or in an unoccupied apartment.

When the gold is entirely dissolved, there will be a small residuum of white powder in the bottom of the glass. This is chloride of silver from the alloy in the gold. The solution of gold must be carefully poured off into another vessel to get rid of this deposit of silver. It must now be diluted with water, and to effect this it can be separated into four parts, each of which is poured into a glass vessel which will hold about a pint. To each part add about half

a pint of water, and then add protosulphate of iron (copperas) previously dissolved in warm water, until a precipitate is formed. Precipitation will begin immediately upon the addition of the copperas, clouding the liquid, and the gold in the form of a rather light brown powder will begin to fall to the bottom of the vessel. Let it stand six hours, or until it has entirely settled, and then pour off the clear liquid from the precipitate. It would be better to save the liquid thus poured off and treat it again with copperas, as the gold held in solution may not all have been precipitated, and you may, by this means, obtain a greater quantity of the powder. Fill the vessels containing the precipitate of gold with clear water, let it stand until it settles, and then pour off the water and replace it by fresh, repeating the process two or three times. This is to wash the precipitate. Finally, pour some chlorohydric acid upon it to eliminate the oxide of iron, which may be present from the decomposition by the water of an excess of copperas, and then wash it in boiling water. When it has settled, pour off the water and transfer the still moist precipitate to a shallow vessel—a plate that will bear heat will do—and, placing it over or in front of a moderate fire, dry it.

We have now the gold precipitate in the form of a powder, which must be prepared for use upon porcelain by grinding and the addition of a flux to make it adhere to the glaze. The rubbing down (it can scarcely be called grinding, as the powder will be found to already be very fine) may be facilitated by passing it through a piece of thin silk or silk muslin.

The flux is formed of nitrate of bismuth twelve parts to one part of pulverized borax. The nitrate of bismuth is formed from the precipitation by water of a solution of bismuth in nitric acid. Carbonate of potash is sometimes used to produce this precipitate, but this method must not be adopted in this case, as the carbonate of potash will also precipitate the oxides of nickel and copper, and the presence of the smallest quantity of copper will injure the effect of the gilding.

Mix one part of the flux described above with twelve parts of the gold powder. This flux is suited for firing upon hard porcelain. If the gold is intended for softer ware and for a lighter firing, borate of lead should be added. The powder is now ready for use, and may be rubbed down on the palette with a sufficient quantity of fat oil and

spirits of turpentine to give it the proper consistency to be applied with the brush.

The second or cheaper method of producing gold powder, mentioned above, is as follows: Take, as before, pure gold (page 106), and dissolve it in three-fifths of an ounce of sal-ammoniac mixed with three-twentieths of an ounce of nitric acid. Then dissolve two ounces of distilled mercury in one ounce of nitric acid, by the aid of a slight degree of heat. This gives the nitrate of the sub-oxide of mercury. Add the latter to the dissolved gold, a little at a time. It forms a voluminous precipitate of gold, which must be washed for some time in boiling water and then dried. The method of preparing for use is the same as that described for the precipitate procured by copperas.

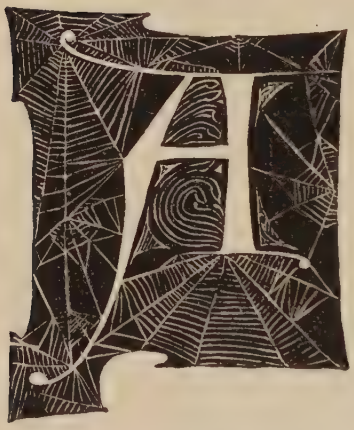
There is also a preparation sold under the name of "bright gold." This may be classed under the head of lustres. Lustres are preparations of various metals in a very much diluted state, which, when applied thinly, give an iridescent effect. The one under consideration is a lustre made from gold which, if applied thinly, gives a pinkish iridescence, but, if applied more thickly, becomes "bright gold." It does not need burnishing, but comes from the fire with a brilliant, metallic lustre. It can be used effect-

ively upon vases and other articles which will not he subjected to hard usage.

Silver is prepared for use upon porcelain in the following way: The metal is dissolved by pouring nitric acid upon it in small quantities at a time. The liquid solution is then placed in a wide-mouthed vessel and diluted with a considerable amount of distilled water. A piece of copper introduced into the solution will produce the precipitation of the silver, which will form in large flakes upon the surface of the copper. Agitate it until the silver is no longer separated, then pour off the liquid, leaving the precipitate in the bottom of the vessel. Wash it several times in warm water, and then dry it. For a flux, mix with it about one-twelfth of the sub-nitrate of bismuth.

CHAPTER XV.

THE USE OF METALLIC PAINTS UPON PORCELAIN.



S considerable difficulty is sometimes experienced in the application of the metals, some suggestions as to the proper manner of using paint made from gold or other metals may be of use. Amateurs often hesitate to attempt the decoration of porcelain with metals, from the idea that they are more difficult to use than the colors. This fear is groundless, as with ordinary care, added to the requisite degree of skill in the use of the brush, any one may soon learn to apply the metallic paints with success. To describe fine lines or bands as borders, either in colors or gold, is difficult, and skill in this branch of decoration, merely mechanical as it is, can only be acquired by much practice. But, after all, formal bands or lines are seldom

needed in artistic decoration, and if a simple edge of gold is required, it can be managed by the aid of a decorator's wheel, which can be procured of any dealer in artists' materials, and should always form part of the furniture of the china painter's table. For describing such edges, and for all lines in decoration, a slender camel's-hair brush, with hairs all of the same length, called a tracer or lining brush, should be used. These brushes can be procured of various sizes, according to the width of line desired.

Of the various metals that can be used by the decorator of porcelain, gold is the most important in a decorative point of view, as well as the most generally useful. I have described the best method of preparing gold, and would advise the china painter to have it prepared in this manner for all fine work. It is much handsomer, as well as more durable, than the gold ordinarily used. As the poorer quality of gold generally requires a second application to produce a satisfactory gilding, the better quality will not be found more expensive in the end. It is best to keep the prepared gold in the form of powder, which can be rubbed down with a little fat oil, to which enough spirits of turpentine is added to reduce it to the proper consistency when it is to be used. This is a very

nice point in the application of gold. If made too thin by an excess of turpentine, the amount of gold laid upon the surface of the china will be insufficient to produce a solid gilding. Neither should too much fat oil be used, but just enough to cause the paint to go on smoothly and to adhere to the porcelain. It might even be used without fat oil, but it would not work quite so smoothly, and would also rub off easily when dry, so that there would be danger that the decoration might be injured in the necessary handling before firing.

It is best, therefore, to mix the gold powder, just before using, with a very small quantity of fat oil and just enough spirits of turpentine to render it possible to lay it on smoothly, and in laying it on to be careful to cover the surface thickly enough to prevent the china showing through after it is fired. If an extended surface is to be covered, the brush marks must be obliterated by the use of a soft blending brush before the paint has dried, or it may be "dabbled" upon the surface by means of the blending brush. Another method of applying it, which, if skilfully performed, would be better for large surfaces, such as dead gold backgrounds, is to spread a sort of varnish upon the surface to be gilded, and then, when it has dried so as to

be slightly tacky, to dust the gold powder in by means of a blending brush. A preparation called ground-laying oil can be procured from the decorators, which will answer this purpose, but a varnish for the application of gold can be made of asphaltum four parts, essence of turpentine six parts, and boiled linseed oil three parts. Boil the mixture half an hour, stirring it meanwhile with a stick, upon the end of which a linen bag containing litharge has been fastened. The consistency of this varnish should be about that of a thick syrup. If it is too thin, the fault can be remedied by evaporating the turpentine; if too thick, by adding more.

After firing, the gold appears dead and must then be rubbed with an agate burnisher if a more brilliant effect is desired. To do this properly, the burnishing tool must be perfectly smooth, and should be passed with firm and even pressure over every part of the surface of the gold to be burnished. If carelessly done, there will be spots left unburnished, giving a worn effect to the gold. If the burnisher is not in good condition, or the pressure is too great, the glaze of the surrounding surface of the china may be scratched. In many cases it is more beautiful unburnished, or, a combination of dead and burnished gold may add

much to the decorative effect. If it is intended that the gold shall be left with a dead surface, it must be fired at a higher degree of heat than the ordinary temperature. When fired, it can be rubbed with chamois-skin and with powder such as that used in polishing silver. If the gold rubs off when an attempt is made to polish or burnish it, it shows that the fire was too weak to fix it upon the surface, and the piece must be refired. If a finish less brilliant than burnished gold, and with a greater degree of polish than dead gold is desired, the decoration can be burnished and the piece refired and left with the polish with which it comes from the kiln. Designs may be painted upon china with a raising preparation and afterward gilded, as, for instance, a pattern of conventional fleur-de-lis or a geometrical pattern of dots and figures for a back-ground. The gilding should not in this case be burnished. After the raising preparation is applied to the piece, it should be fired before being gilded.

The preparation of gold in common use, called bright gold, referred to in the previous chapter, which, although inferior in quality and appearance to the gold mentioned above, yet can be used with pleasing effect upon large pieces for ornament alone, where the fine gold would be

too expensive. Its cheapness and the ease with which it can be applied are recommendations which are irresistible in some cases. In pottery finished with a semi-glaze it produces a very good dead gold effect; on glazed surfaces it comes from the kiln with a rather garish brilliancy. It is sold in bottles in a liquid state and is usually in the right condition for use when procured. If too thin, a portion can be poured out upon a saucer a short time before it is to be used. Exposed to the air, it soon dries. When just beginning to thicken, it is in excellent condition to work with. When it becomes too thick, as it soon will in a warm room, it can be thinned with spirits of turpentine. It is not well to introduce the turpentine into the mixture with the brush, however, but a very small quantity of turpentine should be taken upon the palette knife and rubbed well into the gold, so that it shall be evenly diluted. If too much turpentine is introduced into it, the paint will spread in a very alarming manner upon its application to the porcelain, making a broad and ragged line. When this happens, wipe off the part of the work thus injured, and either wait until the gold has begun to thicken before commencing again, or give it more body by adding some of the thicker liquid from the bottle. Bright gold should be laid on with a uni-

form thickness throughout, but need not be applied as thickly as the other gold, as a rather light application of it will produce an astonishingly brilliant effect on firing. Applied in a very thin wash, bright gold will produce the rose-colored lustre, with which, indeed, it is identical. Silver and other metals are used in the decoration of porcelain in the same manner as gold, except that it is necessary to apply three coats of silver, drying each in a stove before the next is laid. It is then fired, afterward burnished, and fired again. Silver can be applied on gold, or gold on silver, if the metals are pure.

Bronzes of various colors are prepared by Hancock & Sons, which can be used in combination with gold, silver, and colors with very pleasing effect. Of these a dark bronze of an olive hue, and also the green and red bronzes, are very good. They come from the firing with a dead surface, which may be burnished, if desired, in the same manner as gold.

CHAPTER XVI.

LETTERING.

ETTERING, either in monograms or in mottoes expressive of some appropriate sentiment, can be made to play an important part in the decoration of porcelain. Mottoes or inscriptions appear upon much of the old pottery, as well as upon some of more recent date. The Chinese and Japanese place inscriptions on their ware, explanatory of the pictures portrayed upon it. The old Italian majolica was made the means of much pretty love-making, and we know from the inscription on the scroll surrounding her head, that some lady, who seems to us of most uncommon ugliness, was "bella" to her lover. Later, the English potters catered to what was supposed to be American taste, with perhaps only too much acceptance, by making the hideous but patriotic pottery decorated with portraits of Washington,

or with American scenes bearing dates and appropriate mottoes, printed upon its surface.

Letters require the most careful drawing, yet the correctness of eye and steadiness of hand necessary for such drawing may be the possession of one to whom work of a more artistic character would be impossible. Such a one could accomplish decorations upon plates or upon panels or tiles to be inserted in walls, mantel-pieces, or furniture, that would be very acceptable in a decorative point of view. The mottoes portrayed in the style of illuminations would then form the principal decoration, but they can also be used with good effect as subordinate to other designs.

Coats of arms with their mottoes can be used upon the china of those who possess them by inheritance, and for those who do not, monograms must serve the purpose. Many designs of monograms are published, but they are not often very good. The best models for letters to be used in this way are found in the old illuminated manuscripts. Drawings of alphabets taken from old illuminations can be found in the manual of Messrs. Tymms and Wyatt on the "Art of Illuminating," and in a small manual and companion to the manual, which form two of the shilling hand-books of Winsor and Newton. Good designs can be

obtained from the old manuscripts, especially those of the fourteenth century, when the art was at the period of its highest development.

The simplest form of letter consistent with elegance of shape, is the best. The law, that ornament should grow out of the construction, applies here as elsewhere. The ordinary decorator, in designing a letter, seems to let his fancy run riot, and overloads the outline with senseless ornament. Bosses and projections are put on in every conceivable shape, without any excuse for their being. Study of the best models will show greater simplicity of form. Whenever any curve or swelling projection is added, it grows naturally out of the construction, and is not stuck on without any connection with the original form of the letter. Any ornament which is added must be in the shape of a background separated from the letter, and subordinate to it.

In designing a monogram, an effort should be made to give the principal letter prominence, either in size or color, to have the monogram legible, and so arranged that the letters will naturally be read in the order intended. In painting one on china, a good arrangement is gold, black, and red. If the name of a person, the letter of the sur-

name might be made entirely of gold, with an outline of black all around or only on one side, accenting the shadowed side of the latter; the first letter of the Christian name might be in red, either a slender letter in solid red, or red outlined with gold; and the letter of the middle name might be a slender black letter.

If the gold, instructions for making which have been given in a previous chapter, is used, it may be put on with the colors, only where the letters interlace care should be taken that the color is not laid over the gold, or the gold over the color. Each must be laid directly on the china, and they must not impinge upon each other. If a poorer quality of gold is used, the proximity of the colors may injure the gold, and it will probably require a second application. The best quality of gold, however, produces such a solid gilding, that no difficulty will be experienced in firing it and colors together. In making letters or mono grams, a fine brush must be used. A fine lining brush is good for making the fine lines, which must be of the same thickness throughout. Great care, considerable steadiness of hand, and practice with the brush are necessary to excellence in painting letters. The slightest irregularity will be painfully apparent. The drawing may be made upon

the china with a lithographic crayon. If, however, the painter can not trust himself to get a correct outline in this way, the design may be made first upon a piece of paper. An upright line should be drawn through the center, and also one at right angles to it. If the letter is one formed of two halves exactly alike, the paper can be folded along the central line after one half is drawn, and by rubbing a smooth rounded surface over the paper, an impression of the other side of the letter will be made, which will correspond with the one already drawn. When the letter or monogram has been carefully drawn on the paper, it can be traced on the reverse side by holding the paper up to the window. This tracing must be made with a lithographic crayon, and when finished, the side upon which the tracing has been made is laid upon the china, and by rubbing the upper side with something smooth and hard, the outline will be printed upon the surface. The same tracing can be used several times without renewal, if it is desired to repeat the same monogram upon other pieces. Of late a fancy for quaint and even archaic styles of lettering has been revived. This gives the artist greater freedom, as although much care must be exercised in forming even such letters, yet slight irregularities will not be

noticed as in those of a more formal style. Examples of numerous kinds of such lettering may be seen in the current magazines, some of them very good. Such quaint and fanciful lettering may be used for mottoes which are subordinate to other designs, and the words may be designedly placed, so as to run through the decoration in an irregular manner, so that the effect will not be too pronounced, but will only be discovered upon careful examination of the design. In this way charming effects may be produced, and the interest of the piece of china, especially if intended for some special purpose, as a gift to a friend or to commemorate some event, may be greatly enhanced.

CHAPTER XVII.

THE USE OF RELIEF COLORS.

THE use of relief colors upon hard porcelain is usually confined to the production of raised patterns in gilding, the representation of the pattern in lace or embroidery, or the glitter of reflected light upon shining surfaces. Even in this limited degree, relief colors are a valuable addition to the palette of the china painter, but their use could be extended much farther in decorative work. Instances of such use can be found in Japanese and Chinese wares, in which relief colors form a very important part of the decoration. When the decoration is in any large degree to be produced by relief colors, it is better to choose ivory-white ware, or some other kind of light earthenware, as the body

upon which to work, rather than hard porcelain, as relief colors are more likely to blister upon the latter substance when used in masses.

For producing relief in gilded work, the best preparation is doubtless that of Hancock & Sons. This will bear a hard firing without blistering. It is simply a yellow relief color, which should be procured in the form of powder, and can be mixed with a very little fat oil and a considerable quantity of spirits of turpentine. If too much fat oil is used, the paint will run, which will be fatal to the effect of the work, and it would also be more liable to blister in the firing. It could be used with spirits of turpentine alone, but the paint would crumble and rub off at the slightest touch, before it had been fixed by the firing. It is better, therefore, to mix a drop of fat oil with it. The paint must be of such consistency that it can be lifted upon the brush in masses and transferred to the china, forming dots and figures in relief. These colors being necessarily opaque and intended to be used in masses, form a contrast to the other china colors, which are laid on in thin washes, or at most only in sufficient degree to cover the surface upon which they are applied. They will seem a little clumsy and difficult to manage at first, but

by practice dexterity can be acquired. It is better to fire the relief pattern before applying the gold. If burnish gold is used, it can be burnished after firing, if required, just as upon a flat surface. The royal Worcester porcelain furnishes many examples of very dainty use of relief, upon which both gold and bronzes of various colors are applied with excellent effect.

The Lemonnier ware affords an example of a distinct form of the use of relief colors. In this the ware upon which the decoration is produced is a kind of soft white or cream-colored earthenware, upon which flowers are painted in a naturalistic manner upon a clouded ground, usually of a dark color. The highest lights of the flowers are laid in with relief colors, the remainder of the design being in transparent tints. To decorate in this style, take white or light cream-colored earthenware and paint flowers of a light color upon a dark mottled ground. To save the trouble of scratching out the design after the background has been painted, paint the design with powdered chalk mixed with gum water before laying in the background.

The whole surface of the design must be painted over solidly with the chalk and gum water, and care must be taken to have the outlines correct. In order to see these

outlines without difficulty during the process of laying in the design, the chalk may be colored with some bright water color such as carmine. When this is dry, the background can be laid in with a large brush all over the surface without any care as to the design.

A very pretty background can be made with brown green, deep blue green, and green No. 36. The colors, in considerable quantity, if the surface is of any size, may be rubbed down separately with a little spirits of turpentine, and only mixed with the brush in laying on the background, producing an effect of varied tints in which the colors appear alone and in every variety of combination. When the background has become thorougly dry, either soak the piece in water or let water from a faucet run over it. The chalk and gum water can then be gently detached from the surface with the finger or with a bit of cotton, leaving the design in white upon the ware. It can then be painted in the usual manner, except that the highest lights are to be laid in with relief colors.

Another use of relief colors, which may be mentioned, is for decoration in the style of Longwy ware. This is done upon the unglazed surface of white or cream-colored earthenware. A kind of ware of soft white body, glazed

upon the inside, but entirely without glaze on the outside, can be procured for the purpose. The whole surface to be decorated is then covered with a mosaic of color in relief, the design being outlined with black. The outline should be painted first with clear black lines, which it would be better to fire before the relief colors are laid in. When the outline of the entire design has been prepared, the colors are painted in the spaces between the lines. They must be mixed with fat oil and turpentine and made rather thin, as the unglazed surface of the ware absorbs the turpentine, and it will be impossible to lay the color properly if it is too dry. The paint must be applied very thickly, because there should be an actual relief after firing, and it should not be so thin as to reveal the surface of the ware through the colors. Roughness in the surface of this mosaic of color need not give any concern, as the firing will reduce and transform its unsightly appearance, and it will come from the fire with the smoothness and beauty of enamel. The color will be much darker and more brilliant, and it will be necessary to provide for this change. The defect of the ware of this style, as generally seen, is gaudiness of color. No great variety of tints can be procured in relief colors, two or three shades each of

red, green, yellow, and blue, with black and white, being the extent, but they can be mixed with each other or with the transparent colors to change the tints. White relief color can also be laid on and afterward washed over with various transparent colors.

Care must be taken in using relief and transparent colors to employ different brushes for the two kinds of colors, or the brushes used for the relief colors should be very carefully washed before being used for transparent colors.

The reason for this is that the relief colors are rather gritty, and although this quality is not apparent after they are fired, some of these gritty particles may adhere to the brush used for them, if it is not carefully washed, and these particles becoming mixed with the transparent colors, will produce a disagreeable roughness on the surface.

These methods of using relief colors have been described for the guidance of the china painter, but they do not necessarily limit the use of these colors, and are merely offered as suggestions from which other uses of these important aids in decoration may be evolved.

CHAPTER XVIII.

FIRING.

LTHOUGH a very important part of the decoration of porcelain, the one, indeed, which crowns the work with success or dooms it to failure, firing is not the occult process it is supposed to be by the uninitiated. The idea of causing the dainty piece of china, upon which many hours of labor have been bestowed, to endure a temperature which is raised to white heat, is somewhat alarming to the novice, but if properly managed, the most delicate painting will come from this intense heat not injured, but beautified.

In every large city there are decorators who fire the work of amateurs, but the introduction of portable kilns now renders it possible for them to do this part of the work at home, with little trouble and with much less ex-

pense than is incurred in having it done by the professional firer. These kilns also make the execution of the best work practicable by enabling the artist to give his pieces the exact degree of heat demanded by the particular style of work. They are also very easily managed. The one in most general use consists of an iron pot with a cover in which the china is placed, and around which, between it and an outside wall of fire clay tiles, is a space of three or four inches to contain the fuel. The pot, as well as the cover, is provided with a vent from which a short iron pipe proceeds. The whole apparatus is elevated upon three feet. The fuel used is charcoal.

These kilns can be procured of various sizes to suit the needs of decorators. The size which it is best for an amateur to use depends upon the amount and kind of work which is to be fired in it. A small kiln is more economical in the matter of fuel, but on the other hand will not hold pieces of any considerable dimensions, and there is danger of the breakage of pieces which are disproportionately large. A kiln of the smallest size can be fired with twenty cents' worth of charcoal, while one of a capacity of twelve by sixteen inches will require twice as much fuel. A shelf is provided for use when a number of small

articles are to be fired; this allows twice as many pieces to be well placed. The kiln should be placed out of doors, in as sheltered a situation as possible. The fumes of the charcoal would be too oppressive in a room or cellar. It can, however, be used upon a porch by taking the necessary precautions against fire. A piece of sheet iron should be laid upon the floor beneath it, and the kiln should also be raised by placing the feet upon bricks. A round sheet-iron pan can be procured of such dimensions that it can be slipped under the kiln between the feet. This should also be set upon bricks. Into this pan the coals can be allowed to fall, when, a sufficient degree of heat having been attained, a slide at the bottom of the kiln, arranged for this purpose, is drawn. It would be more convenient to have such a pan underneath the kiln to receive the coals in any case. These kilns are easily set up, according to directions given by the makers.

Before beginning to set the pieces to be fired in the kiln, it is better to have some charcoal ignited, for the purpose of starting the fire. This is done by placing a few pieces of charcoal with some kindling and red coals in the perforated iron basket which comes with the kiln. By the time the pieces are placed in the kiln, the coals will gen-

erally be ignited to a sufficient degree to start the fire. The pieces of china should be placed upon fire clay stilts, and in arranging them in the kiln care should be taken that they do not touch each other. The stilts should also be so placed that the points upon which the china rests do not come in any part of the piece where they can injure the painting. Perfect stilts, those having sharp points, should always be chosen, as a stilt, the point of which has been broken, may come against some part of the painting where it will leave an unsightly spot. The position of the article is immaterial, that is, it may be placed sidewise or upside down if convenience so dictate, but it must rest so firmly upon the stilt by which it is supported, that any slight jarring of the kiln, which might easily occur in putting in the fuel, will not cause it to slip out of place and perhaps against another piece. If the article is a large one, it should be placed as near the centre of the kiln as possible so as to receive the heat evenly, and there must not be too heavy a weight placed on top of it. One piece may be placed upon another, only with this caution, that heavy pieces should not be placed upon light ones or any weight upon a large piece. With large pieces the danger of firing in a small kiln is greatly increased, as the intense heat is

attained so quickly that the piece is liable to be broken, unless great care is exercised.

The pieces being properly arranged, the cover is replaced upon the iron pot, and the vent-holes are closed with wads of paper to prevent dust from getting inside during the process of putting in the fuel. The kiln is now ready for the fire, and the coals, which have been ignited in the iron basket, are now to be distributed evenly around and upon the top of the pot, and the kiln is then filled with charcoal, which should also be heaped upon the top. The paper wads must now be removed from the vent-holes. In from one-half to three-quarters of an hour the kiln will be heated to the greatest possible degree. The length of time in which this temperature is attained will vary according to the quantity of ignited coals which have been used to kindle the fire and the state of the atmosphere. It is better to have the fire kindle slowly, so that the china may be gradually tempered to endure the heat. This caution should be especially observed if large pieces are to be fired, and for this reason, in any case, it is better to avoid firing on a windy day, as the wind fans the coals and ignites them so quickly that the fire is brought to a very high temperature too suddenly. A rainy day should

also be avoided, unless the kiln is so placed as to be sheltered from drops of rain. The least moisture penetrating the kiln will injure the glaze.

The temperature may be observed by looking into the vent-holes. When heated to the highest degree, the china will be visible inside, appearing of an intense whiteness relieved against the red-hot iron. When this point has been reached, the slide may be drawn and the red coals dropped into the pan, and the kiln allowed to cool. When there is plenty of time, it will do no harm to let the coals remain in the kiln and gradually burn out, that is, if the articles fired are of such a character as to demand the highest degree of heat, as no higher temperature than that indicated by the appearance described will be reached. Letting the fire burn out of itself is a good practice in very cold weather, as it insures a very gradual cooling of the kiln. In firing certain kinds of decoration, especially that of relief colors or certain of the more fusible pigments, it may be desirable to stop the fire before it has reached the highest temperature; but for gold, especially when a dead surface without burnishing is desired, the highest degree of heat is requisite. A high temperature in firing also insures a fine glaze to all colors which will bear it.

The time required for the kiln to cool sufficiently to permit its being opened will depend upon the temperature of the air and upon the size of the kiln. To prevent scaling of the colors, it is better to allow the pieces to remain in the kiln until they are sufficiently cool to permit their being held in the hands while they are removed. The kiln should never be opened in less than an hour or so after the fire has been stopped, as a current of cold air upon the heated china will cause it to break. For fear of accidents it is better to moderate the impatient desire to see the contents of the kiln, and to refrain from opening until it is perfectly certain that they have cooled sufficiently to permit their removal without injury. When taken out, articles fired according to the directions here given will be found to have a very brilliant glaze. The surfaces will be slightly rough on coming from the kiln, but this roughness can be entirely removed by rubbing with emery paper.

The description given applies to the earliest and simplest form of portable kilns. Of more recent invention are the kilns fired with coal oil, and for those to whom city gas is accessible, are the very convenient gas kilns.

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